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THESIS

THE TRANSPORTATION SECURITY ADMINISTRATION'S FOUR MAJOR SECURITY PROGRAMS FOR MASS TRANSIT—HOW THEY CAN BE IMPROVED TO ADDRESS THE NEEDS OF TIER II MASS TRANSIT AGENCIES

by

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March 2011

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This thesis used the interview and policy options methodologies to find ways to improve these security programs. The focus of the study was on high level strategic goals of increasing law enforcement officers, and increasing explosives detection canine teams for Tier II transit agencies. Strategic recommendations for achieving these goals and other tactical considerations are enumerated. These recommendations and considerations will be forwarded to the Transit Police and Security Peer Advisory Group (PAG) that advises the TSA on these types of issues. If the PAG finds them to be of merit, it may choose to present them to the TSA.

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LIST OF ACRONYMS AND ABBREVIATIONS

AFSD	Assistant Federal Security Director
APTA	American Public Transportation Association
AQ	Al Qaeda
ARRA	American Recovery and Reinvestment Act
ATT	Anti Terrorism Team
BART	Bay Area Rapid Transit District
BASE	Baseline Assessment and Security Enhancement Program
BDO	Behavioral Detection Officer
CBP	Customs and Border Protection
CI	Critical Infrastructure
CONOPS	Concept of Operations
COPS	Community Oriented Policing Services
CTA	Chicago Transit Authority
CWS	Canine Website
DHS	Department of Homeland Security
DOD	Department of Defense
DOJ	Department of Justice
DOT	Department of Transportation
EDC	Explosives Detection Canine
EDCT	Explosives Detection Canine Team
EDCTP	Explosives Detection Canine Team Program
FAA	Federal Aviation Administration
FAMS	Federal Air Marshals Service
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FPS	Federal Protective Service
FSD	Federal Security Director
FTA	Federal Transportation Administration
FY	Fiscal Year
GAO	Government Accountability Office

HQ	Headquarters
IED	Improvised Explosives Device
IEDDA	International Explosive Detection Dog Association
IRA	Irish Republican Army
ISTEA	Intermodal Surface Transportation Efficiency Act of 1991
LEO	Law Enforcement Officer
MARTA	Metropolitan Atlanta Rapid Transit Authority
MBTA	Massachusetts Bay Transportation Authority
METRO	Los Angeles County Metropolitan Transportation Authority
MTA	Maryland Transit Administration
MTI	Norman Y. Mineta International Institute for Surface Transportation Policy Studies
MUNI	San Francisco Municipal Railway
NAPWDA	North American Police Working Dog Association
NEDCTP	National Explosives Detection Canine Team Program
NIMS	National Incident Management System
NIPP	National Infrastructure Protection Plan
NPCA	National Police Canine Association
NRC	National Research Council
ODP	Office for Domestic Preparedness
OIG	Office of Inspector General
OPACKS	Operational Packages
PAG	Transit Policing and Security Peer Advisory Group
PATH	Port Authority Trans-Hudson Corporation
PL	Public Law
QHSR	Quadrennial Homeland Security Review
SDTI	San Diego Trolley, Inc.
SEPTA	Southeastern Pennsylvania Transportation Authority
STSIP	Surface Transportation Security Inspection Program
SWGDOG	Scientific Working Group on Dog and Orthogonal Detection Guidelines
TCRP	Transit Cooperative Research Program

TP	Transit Police
TSA	Transportation Security Administration
TSGP	Transit Security Grant Program
TSI	Surface Transportation Security Inspector
TSOC	Transportation Security Operations Center
UA	Urban Area
UASI	Urban Area Security Initiative
UK	United Kingdom
U.S.	United States
USCG	United States Coast Guard
USPCA	United States Police Canine Association
USMC	United States Marine Corps
USSS	United States Secret Service
VIPR	Visible Intermodal Prevention and Response Team Program
WMATA	Washington Metropolitan Area Transit Authority
WMD	Weapons of Mass Destruction

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I. INTRODUCTION

On March 11, 2004, radical extremists in a spectacular attack bombed Madrid's National Rail System in Madrid Spain. On July 22, 2004, *The 9/11 Commission Report* on the terrorist attacks upon the United States released its report and noted that terrorist opportunities to do harm were as great or greater in the mass transit mode as the aviation sector, and questioned the Transportation Security Administration's (TSA) spending of over 90 percent of its annual budget of $5.3 billion on the aviation sector, and its overall lack of planning for the security of mass transit (National Commission on Terrorist Attacks, 2004). On December 5, 2006, *Executive Order 13416*, issued by the President, set policy that recognized the security of the surface transportation system as a national priority (Bush, George W, 2006). Then on August 3, 2007, the 110th Congress passed Public Law (PL) 110-53, known as the *Implementing Recommendations of the 9/11 Commission Act of 2007*. The 9/11 Commission Act established the framework for TSA's four major security programs for mass transit. Most of the security programs' resources have been focused on protecting against another spectacular attack on a transportation system in a major U.S. city; however, these security program investments have been based on a faulty risk assessment model and a complex and changing threat environment. This may leave the United States' smaller region's transportation systems vulnerable to terrorism.

A. PROBLEM STATEMENT

1. Background

Terrorism has long been a threat to mass transit, and attacks after September 11, 2001 have been particularly deadly. As Bhatt and Silber reported in their 2007 study entitled *Radicalization in the West: The Homegrown Threat*, on March 11, 2004, terrorists detonated 10 improvised explosive devices (IEDs) on four commuter trains of the national rail system, in Madrid, Spain. Three other bombs were discovered by Spanish police in their largest and busiest rail station before they had a chance to explode.

The incident resulted in the death of nearly 200 people and the injury of another 2,050 (Bhatt & Silber, 2007, pp. 23–56). On July 7, 2005, a series of coordinated suicide bombing attacks were carried out on London's transit system during the morning rush hour. Three bombs exploded on three London underground trains. A fourth bomb exploded an hour later on a bus. Fifty-six people were killed, including the bombers, and about 700 were injured. (Bhatt & Silber, 2007, pp. 23–56). On July 11, 2006, a series of seven bombs exploded on the suburban railway in Mumbai, India. Two-hundred-nine people were killed (GAO, 2009b, p.1).

According to the Homeland Security Advisory Council's *Report of the Future, Terrorism Task Force*, there is every indication that the number of planned attacks in the United States will increase (Homeland Security Advisory Council [HSAC], 2007, p. 2). On September 20, 2009, in an announcement that received wide media attention, the U.S. Department of Justice revealed on its website, the arrests of three men in New York and Colorado in a case of homegrown terrorism. The three men were alleged to have been involved in a plot to detonate improvised explosives devices (IEDs) on the New York public transit system (U.S. Department of Justice [DOJ], 2009h). In that same matter, on February 22, 2010, Najibullah Zazi pleaded guilty in U.S. District Court in the Eastern District of New York to charges of conspiracy to use weapons of mass destruction (explosive bombs) against persons on property in the United States, conspiracy to commit murder in a foreign country and providing material support to al-Qaeda (U.S. Department of Justice [DOJ], 2010i). Zazi is a resident of Aurora, Colorado (DOJ, 2010i). He and others traveled to Peshawar, Pakistan and were recruited by al-Qaeda to return to the United States to conduct suicide operations (DOJ, 2010i). Zazi returned to the United States in January 2009 and moved to Denver, Colorado (DOJ, 2010i). Zazi intended to conduct a bombing attack on the New York Subway system (DOJ, 2010i). He planned for the attack in the Denver area and bomb-making residue was found in hotel rooms where he stayed near Denver, Colorado before he was arrested (DOJ, 2010i). Noteworthy in this case is the fact that the terrorists' activities were not limited to New York City, and they could have just as easily targeted a smaller more

vulnerable region. Rail and mass transit systems are vulnerable targets to terrorists because they are vast, open, easily accessible, and they operate on fixed schedules (GAO, 2009b, p. 8).

2. Situation

As noted in the U.S. Government Accountability Office (GAO) report of June 2009, the U.S. Department of Homeland Security (DHS) Transportation Security Administration (TSA) has been given the mandate for security of the transit industry under the Transportation Security Act of 2001 and the Homeland Security Act of 2002 (U.S. Government Accountability Office, [GAO], 2009a, p. 7). TSA's efforts to provide for the security of the industry are conducted in large part through four major security programs. These programs are the Transit Security Grant Program (TSGP), the National Explosives Detection Canine Team Program (NEDCTP), the Surface Transportation Security Inspection Program (STSIP), and the Visible Intermodal Prevention and Response Team Program (VIPR).

The purpose of the TSGP is to provide funds to protect critical infrastructure and the riding public (GAO, 2009a, p. 2). Between fiscal years (FY) 2006–2009 inclusive, $1.156 billion was allocated to transit agencies for security (GAO, 2009a, p. 7). The DHS designates eight major urban areas with mass transit systems as Tier I and the rest of the country's urban areas as Tier II (Office of the Inspector General [OIG], 2008, p. 2). All transit agencies then fall into these Tiers I or II, based on their terrorism risk scores to determine initial TSGP funding allocations (GAO, 2009a). DHS determines the regions it considers at the highest risk of a terrorist attack and selects transit agencies within those regions eligible to receive Tier I funding (GAO, 2009a). Each Tier I region is given a target allocation based on its share of risk as determined by DHS' risk model (GAO, 2009a, pp. 1–18).

Lower-risk regions and certain transit agencies in those regions make up the Tier II group (GAO, 2009a). Eligible Tier II transit agencies are determined by using Federal Transportation Administration (FTA)'s National Transit Database, which identifies transit agencies by ridership (GAO, 2009a). Transit agencies that are not in the top 100

for passenger trips are not eligible for funding (GAO, 2009a). The Tier II allocation is a set amount of funding allocated for all Tier II regions combined, and Tier II mass transit agencies apply for funding in competition with other Tier II agencies (GAO, 2009a, p. 12).

Based on this system, 90 percent of the $1.156 billion was awarded to transit agencies in eight Tier I urban areas (GAO, 2009a, p.18). The remaining 10 percent of the funds were allocated between 51 transit agencies in Tier II urban areas on a competitive basis (GAO, 2009a, pp. 17–18). In FY 2008, $13.7 million was transferred from Tier II back to Tier I transit agencies (GAO, 2009a, pp. 17–18). Transit agencies that are not in the top 100 for passenger trips are not eligible for funding (GAO, 2009a, pp. 1–18).

The application of TSA's other major security program resources to Tier II mass transit agencies is similarly skewed, particularly in the case of explosives detection canine teams (EDCTs). Surface Transportation Security Inspector (TSI) positions are understaffed, and VIPR operations are conducted at Tier II mass transit agencies on a less frequent basis than desired.

3. Problem and Central Causes

The June 2009 GAO report noted that the 9/11 Commission Act of 2007 required that TSGP recipients be selected based on risk (GAO, 2009a, p. 8). The risk model used by the TSA as a component of the DHS is calculated as a function of threat, vulnerability, and consequences (GAO, 2009a, p. 16), or expressed as a mathematical formula, R = f(T x V x C). The rail mode and bus mode risk scores are combined to determine the total risk for the region (GAO, 2009a, p. 51). Within each mode, the threat index, which is classified, accounts for 20 percent of the total risk score, while the vulnerability and consequence indexes for each mode account for 80 percent (GAO, 2009a, p. 51). In the rail mode, the consequence score is based on a population index (40 percent) plus a national infrastructure index including underground track miles and underwater structures (40 percent) (GAO, 2009a, p. 52). In the bus mode, the consequence mode is based on passenger trips (GAO, 2009a, pp. 51–52). As a result of the TSGP risk model, total

transit risk, and therefore security funding, is weighted toward urban areas with high ridership combined with rail modes with underground track, and underwater structures (GAO, 2009a, pp. 51–52).

The GAO report cited a number of weaknesses in the TSGP. Notable was the fact that the TSGP risk model does not measure variations in vulnerability, which limits the model's overall ability to assess risk (GAO, 2009a, pp. 16–17). The GAO further noted that DHS has not produced performance measures and therefore cannot assess the effectiveness of the TSGP in protecting critical transportation infrastructure and the traveling public from acts of terrorism (GAO, 2010a, pp. 13–14).

In addition to the GAO's findings, the National Research Council (NRC) of the National Academies reviewed the DHS risk methodology and concluded that DHS practices related to risk analysis have been flawed (National Research Council [NRC], 2010, p.11). The DHS has not been following critical scientific practices of documentation, validation, peer review by technical experts external to DHS, and publishing (NRC, 2010, p. 3). Given this lack of a disciplined approach it is very difficult to know with precision how DHS risk analyses are being done and if their results are reliable and useful in decision making (NCR, 2010, pp. 1–12). The NRC concluded that until deficiencies in the methodology are improved, only low confidence should be placed in most of the risk analyses conducted by DHS (NCR, 2010, p. 11). Moreover, the DHS does not appear to be on a path for development of those methods and capability (NRC, 2010, pp. 2–4).

4. The Changing Threat

The NRC reported that in relation to the risk from terrorism, defining the threat and estimating probabilities are inherently challenging because of the lack of experience with such events, the associated absence of data on which to base reliable estimates of probabilities, and the effect of an intelligent adversary that may seek to defeat preparedness and coping measures (NRC, 2010, p. 4). The NRC noted that there has been a lack of terrorism threat data for consideration in the risk analysis model (NRC, 2010, p. 4).

However, the threat data has been accumulating and a clearer picture of the threat is emerging. On September 22, 2010 Janet Napolitano, Secretary, U.S. Department of Homeland Security, appeared before the Senate Committee on Homeland Security and Governmental Affairs. Secretary Napolitano indicated that homegrown terrorists represent a new and changing facet of terrorist threat (DHS, 2010). She defined "homegrown" as terrorist operatives who are U.S. persons who were radicalized in the United States and who learned terrorist tactics either in the United States or in foreign training camps) (DHS, 2010). She noted that terrorist organizations are continuously looking for operatives who are familiar with the United States or the West, and who can be of assistance to foreign terrorists (DHS, 2010). Secretary Napolitano observed that now, virtually anything is a potential target, including mass transit and passenger rail (DHS, 2010).

A cursory review of recent terrorism cases in the United States reveals significant numbers of cases of terrorism activity in and around Tier II regions. A review of the DOJ data between December 2008 and December 2010 revealed 11 terrorism cases in addition to the Najibullah Zazi—"Times Square Bomber" case that have ties to Tier II regions. A brief summary of those cases is provided in the appendix of this thesis.

5. Possible Consequences

In March 2010, the Mineta Transportation Institute published a report entitled, *Terrorist Attacks on Public Bus Transportation: a Preliminary Empirical Analysis*. The authors, Brian Michael Jenkins, Bruce Robert Butterworth, and Karl S. Shrum, reported that domestic radicalization and recruitment in the United States are on the increase) (Mineta, 2010, p. 15). Between September 12, 2001 and the end of 2009, 44 cases of domestic radicalization and recruitment to jihadist terrorism were reported in the United States (Mineta, 2010, p. 15). 32 cases were reported between 2002 and 2008, an average of four a year (Mineta, 2010, p. 15). By contrast, in 2009 there were 12 cases, a considerable increase (Mineta, 2010, p. 15). In the 150-year history of pubic transportation, terrorist attacks were infrequent between 1920 and 1970, with only 15 recorded, mostly targeting trains with bombs (Mineta, 2010). Terrorist attacks on public

transportation intensified in the early 1970s and have been on the increase since then. Of the 1,399 recorded attacks on mass transit since 1970, 51.1 percent have been against bus targets, 35.7 percent have been against train targets (Mineta, 2010, p. 19). No cases of bus bombings have been recorded in the United States (Mineta, 2010, p. 22). When explosives and incendiaries are involved, the highest incidences of bus attacks have been in South Asia, the Middle East, and North Africa (Mineta, 2010, p. 22).Western Europe ranks fifth for bomb attacks against bus targets (Mineta, 2010, pp. 15–23).

The authors of the Mineta report, Jenkins et al., considered whether the nation should be concerned about the possibility of public bus transportation becoming a potential target for terrorist attacks, and whether the authorities should be eager to protect it. They concluded that it is difficult to provide a firm answer to the question, but that a public bus, bus station, or bus stop in the United States is:

- A target containing a sufficient number of people to provide an adequate body count for terrorists.
- A target that has been attacked repeatedly elsewhere with a high degree of success, creating a kind of menu of successful and relatively simple attack methods.
- A target that, although it has not yet appeared in jihadist plots to attack targets inside the United States, can be an important part of an urban mass transit system that has been targeted and might reasonably appear on the radar screens of radical jihadist groups seeking an operational success, particularly if heavy rail mass transit targets become hardened in anticipation of attacks or in response to them. (Mineta, 2010, p. 16)

The report noted that it is important that government officials, mass transit operators and employees not take false comfort in the lack of attacks in the U.S (Mineta, 2010, p. 16). Tier II transit agencies are more likely to be focused on bus operations, but have less security resources at their disposal, and have less eligibility to receive grant funding to enhance security. If U.S. bus transit systems become the target of terrorist attacks, the Tier II agencies that operate them may not be prepared to address the threat.

B. RESEARCH QUESTION(S)

1. Primary Questions

1. What support does the TSA currently provide to meet the terrorism security needs of mass transit agencies classified as Tier II agencies?
2. How can TSA's four major security programs for mass transit be improved to address the security of Tier II mass transit agencies?

2. Secondary Questions

1. How do Tier II transit agencies assess their current state of terrorism security preparedness?
2. How do Tier II transit agencies assess the TSA's performance in addressing its mandate to provide for Tier II security needs?
3. How can the security gaps be filled?

C. SIGNIFICANCE OF RESEARCH

1. Literature

Currently, there is no literature on the specific question of whether the TSA is meeting the terrorism security needs of Tier II transit agencies. Therefore, from this perspective alone this research will be instructive. There is only limited literature on the TSA's four major security programs for mass transit, particularly the TSA's National Explosives Detection Canine Team Program. This thesis will consolidate whatever information is available, and develop new information specifically related to Tier II agencies.

2. Future Research Efforts

The thesis will serve as a baseline of research specifically related to Tier II transit agencies. The research can be used as a springboard to increase the effectiveness of each of TSA's four major security programs for mass transit and develop new security concepts for Tier II agencies.

3. The Immediate Consumer

The immediate consumer of this information is the TSA and mass transit agencies. This research will bring to the forefront information that has not yet been recognized as a problem. Early identification of the issue will allow for the timely development of program modifications to enable security gaps to be filled by Tier II transit agencies.

4. Homeland Security Practitioners and Leaders Nationally

Identification and recognition of the problem, followed by the development of program enhancements to fill security gaps will result in improved programs to address Tier II homeland security practitioner's needs. This research will assist national leaders who may be unprepared for the potential threat against Tier II mass transit agencies and also unaware of the security gaps facing those agencies.

D. METHODOLOGY: INTERVIEW AND POLICY OPTIONS ANALYSIS

This thesis was conducted using the interview and policy options analysis methodologies. The manner in which these methodologies were used is described in this section.

1. Interview Methodology and Criteria

The interview methodology was chosen largely to solicit relevant data from professional security practitioners in the field of mass transit. These security professionals provided information that was unavailable from open sources of data alone. As subject matter experts, their opinions expanded upon the open source data. Chiefs of Police from Tier I and Tier II mass transit agencies were selected for interview because they could be expected to have the most current, relevant, first-hand subject matter knowledge. The interviews provided context to the U.S. government reports and other open source data, and helped in developing the policy options presented in this thesis. Chiefs of Police from both Tier I and Tier II mass transit agencies were identified from the ranks of those who had attended Transit Safety and Security Roundtables sponsored

jointly by the Department of Transportation-FTA and DHS- TSA. These roundtables are considered to be the cornerstone in the federal effort to support safety, security and emergency preparedness in our nation's public transportation industry. Chiefs of Police who had attended these roundtables were chosen to be interviewed because they were considered to have a combination of specialized knowledge relating to their respective mass transit agency's security needs, the overall threat environment, an understanding of the difference between the two tiers of mass transit agencies, and up-to-date knowledge of the TSA's major security programs for mass transit. Three Tier I Chiefs of Police were interviewed, representing 37 percent of the eight Tier I mass transit urban areas. Seven Tier II Chiefs of Police were interviewed, representing 13 percent of the 51 Tier II mass transit urban areas. Combined, these 10 chiefs represent 10 percent of the nation's top 100 mass transit agencies. All of the Chiefs of Police were provided with anonymity, to assuage any concerns over providing constructive comments about TSA's administration of its four major security programs for mass transit.

The specific questions (see below) were asked of the Chiefs of Police of the Tier I mass transit agencies. The questions were designed to be general to allow the chiefs to provide their broad perspective on the specific programs. Follow up questions were asked essentially to maintain the focus of the interview and to expand on the chiefs' responses, or for clarification.

1. Please describe how your mass transit agency applies the TSA's National Explosives Detection Canine Team Program (NEDCTP) to your agency's security efforts. What is good about the program, and how can it be improved? What recommendations can you make to Tier II mass transit agencies concerning this program?
2. Please describe how your mass transit agency applies the TSA's Surface Transportation Security Inspector Program (STSIP) to your agency's security efforts. What is good about the program, and how can it be improved? What recommendations can you make to Tier II mass transit agencies concerning this program?
3. Please describe how your mass transit agency applies the TSA's Visible Intermodal Prevention and Response Team Program (VIPR) to your agency's security efforts. What is good about the program, and how can it be improved? What recommendations can you make to Tier II mass transit agencies concerning this program?

4. Please describe how your mass transit agency applies the TSA's Transit Security Grant Program (TSGP) to your agency's security efforts. What is good about the program, and how can it be improved? What recommendations can you make to Tier II mass transit agencies concerning this program?

The same questions were asked of the Chiefs of Police of the Tier II mass transit agencies, without asking for the recommendation that was asked of the Tier I police chiefs. As with the Tier I questions, the Tier II questions were designed to be general to allow the chiefs to provide their broad perspective on the specific programs. Follow up questions were asked essentially to maintain the focus of the interview and to expand on the chiefs' responses or for clarification.

1. Please describe how your mass transit agency applies the TSA's National Explosives Detection Canine Team Program (NEDCTP) to your agency's security efforts. What is good about the program, and how can it be improved?
2. Please describe how your mass transit agency applies the TSA's Surface Transportation Security Inspector Program (STSIP) to your agency's security efforts. What is good about the program, and how can it be improved?
3. Please describe how your mass transit agency applies the TSA's Visible Intermodal Prevention and Response Team Program (VIPR) to your agency's security efforts. What is good about the program, and how can it be improved?
4. Please describe how your mass transit agency applies the TSA's Transit Security Grant Program (TSGP) to your agency's security efforts. What is good about the program, and how can it be improved?

2. Policy Options Methodology

The policy options methodology was chosen because it lends itself to the specific objectives of this thesis research. Through this methodology it is possible to delineate a set of discrete policy options that have not been attempted and that may provide solutions to the existing problems. Accordingly, this research will identify, explain, and compare policy options for improving TSA's major security programs for Tier II mass transit agencies. Each of TSA's major security programs can be improved. This thesis identifies two specific high level areas to focus on for their significant broad potential

impact. They are first, increasing the number of law enforcement officers (LEOs) for Tier II mass transit agencies and; second, increasing the number of Explosives Detection Canine Teams (EDTCs) for Tier II mass transit agencies.

The policy options for accomplishing these two separate goals, which will be examined, were derived from the literature review, open sources of data, and the interviews of Chiefs of Police from Tier I and Tier II mass transit agencies. These policy options generally include program options now available only to Tier I mass transit agencies; options that have been available to Tier II mass transit agencies on a one time basis, but with limitations; modifications of practices within existing programs; and the introduction of new types of programs. These alternatives will be compared, contrasted, and evaluated and provide the rationale for choosing this methodology.

At the outset, three policy options will be introduced for increasing the number of LEOs for Tier II mass transit agencies. The policy options will be described in detail and evaluated on the basis of the following criteria:

First, effectiveness will be evaluated in relation to the increase in the number of LEOs or explosives detection canines that can be produced based on a given budget. Second, cost will be evaluated in relation to the estimated monetary expense associated with implementing the recommended changes. Third, level of effort will be evaluated in relation to whether energy or exertion is required to implement the recommended changes. This will be estimated on the basis of two factors. First, will the policy option work within the existing legal framework, or will it require new legislation? Second, will the policy option add increased administrative burden on the Tier II mass transit agency? Lastly, political acceptability will be evaluated in relation to the acceptability of any proposed options to the mass transit industry, the TSA, and the Congress.

A detailed explanation and analysis of each of the three policy options for increasing LEOs within the evaluative criteria is undertaken in the policy options analysis and Evaluation chapter**.** The results will be compared and detailed in a policy options matrix and these results will then be summarized. Finally, a recommendation will be

made to adopt a policy option that best addresses the high impact security improvement of increasing LEOs for Tier II mass transit agencies.

The same evaluative process will be followed and presented for increasing EDCTs for Tier II mass transit agencies.

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II. LITERATURE REVIEW

A. INTRODUCTION

This literature review is centered on the primary research question of what support the Transportation Security Administration provides to meet the terrorism security needs of mass transit agencies classified as Tier II agencies. This review will seek to explore the subfields of literature on the topic of mass transit security thereby encompassing the primary research question.

There has been no literature that addresses the basic question of whether the TSA is meeting the terrorism security needs of mass transit agencies classified as tier II agencies. There are however, a variety of related subfields of literature on the topic of TSA, its security responsibilities for mass transit, including Tier I and Tier II agencies, and mass transit security in general. These subfields of the literature can be grouped into five general categories. First is the federal government legislation, 9/11 Commission recommendations, and Executive Order, which created the TSA and set forth its responsibilities for securing the transportation industry, including mass transit. The second subfield in the literature is TSA's own documents defining its vision for securing mass transit. The third subfield in the literature can be found in U.S. government reports, which document the performance of some of the programs that the TSA carries out in support of its mandate for the security of mass transit. The fourth subfield of the literature is security reports generated by the public transportation industry. The fifth subfield of the literature is reports on mass transit security prepared by accredited scholars and researchers.

B. FEDERAL GOVERNMENT LEGISLATION, 9/11 COMMISSION ACT RECOMMENDATONS AND EXECUTIVE ORDERS

A review of the *Aviation and Transportation Security Act of 2001* reflects that the TSA was created out of Public Law 107-71, by the 107th Congress, on November 19, 2001. The first written line in the act reads, "to improve aviation security, and for other

purposes" (Aviation, Transportation Security Act [ATSA], 2001, p. 1). The Act makes clear however that the TSA shall have security responsibility for all modes of transportation including those exercised by the U.S. Department of Transportation (DOT). With that said, the only substantive reference to surface transportation that could be found in the Act is in relation to national emergencies. There is no mention of mass transit in the Act, and from the reading it is clear that the Act was not written from the perspective of securing mass transit. Therefore, it is apparent that at the genesis of TSA's formation its support of mass transit in general was lacking, including of course, support for Tier II mass transit agencies. On the other hand, there were additional duties imposed on the TSA by the Aviation and Transportation Security Act that had the potential to impact on modes of transportation beyond aviation, including mass transit (ATSA, 2001, Sec. 114 f, 5). Under this act, the TSA was placed within the DOT.

A review of the *Homeland Security Act of 2002* (HSA) offered no further clarification than the Aviation and Transportation Security Act of 2001 on the role of the TSA in securing mass transit in the immediate aftermath of its formation. This Act was also passed by the 107th Congress, on November 25, 2002, under Public Law 107-296. The over-riding purpose of the legislation was to create the U.S. Department of Homeland Security. TSA was transferred from the DOT, and maintained as a distinct entity within the DHS, reporting to the Under Secretary for Border Protection Transportation and Security (*Homeland Security Act* [HSA], 2002, Sec. 424, a).

A deeper review of the *Homeland Security Act of 2002* provided insights into the mandates of the TSA's parent organization, the DHS, a department that oversees the TSA in providing for the security of mass transit. For example, this Act mandated the creation of components within the DHS such as the Office of Science and Technology to serve as a focal point for work on law enforcement technology; the creation of an Office for Domestic Preparedness (ODP) to manage security grants and other responsibilities; the creation of the Office for State and Local Government Coordination to oversee and coordinate programs for, and relationships with, state and local governments; and to facilitate information sharing with state and local agencies. Each of these components has the potential of supporting the TSA in is mission of securing mass transit.

On July 22, 2004, *The 9/11 Commission Report* on the terrorist attacks upon the United States was released. The commission recognized the inherent difficulty in protecting surface transportation due to its size and accessibility. The commission also noted that terrorist opportunities to do harm were as great or greater in this mode of transportation as the aviation sector, and took note of the fact that despite congressional deadlines, the TSA had not developed an integrated strategic plan for the transportation sector, or specific plans for the various modes (National Commission on Terrorist Attacks NCTA, 2004, p. 391). The commission also questioned the TSA's allocation of its resources with over 90 percent of its annual budget of $5.3 billion going to the aviation sector NCTA, 2004, p. 391). Without a strategic plan, the commission seems to be justified in questioning whether our transportation security resources were being allocated cost effectively toward the greatest risks.

The *Executive Order 13416* issued by the President on December 5, 2006 set policy that recognized the security of the surface transportation system as a national priority. This order also placed the requirement on TSA for the implementation of a security program to protect surface transportations against terrorist attacks (Bush, 2006, Sec. 1). This document appears to be what finally expanded TSA's focus beyond aviation security to mass transit.

On August 3, 2007 the 110th Congress passed Public Law 110-53, known as the *Implementing Recommendations of the 9/11 Commission Act of 2007*. The Act authorized the TSA to develop Visible Intermodal Prevention and Response Teams (VIPR). The TSA was authorized to use any asset of the department including Surface Transportation Security Inspectors (STSIs,) canine explosives detection teams and advanced screening teams. The Act also authorized the TSA to train, employ, and use STSIs to assist surface transportation entities in enforcing security regulations and directives. Concerning EDCTs, the TSA was authorized to increase the number of these teams for the purpose of transportation-related security (IRCA, 2007, Sec. 1303, 1304, 1307). The Act made no reference to either TSA focusing or being required to focus these programs on rail operations to the exclusion of bus operations.

C. TSA PRODUCED LITERATURE DEFINING ITS VISION FOR SECURING MASS TRANSIT

The Transportation Sector: Specific Plan, Mass Transit Modal Annex issued in May 2007 (DHS, 2007, p. 1), appears to be TSA's response to criticisms of the 9/11 Commission and the directive of Executive Order 13416, and in anticipation of the *Implementing Recommendations of the 9/11 Commission Act of 2007*. The document describes the use of a risk management system to reduce risk and deploy assets to areas where they can be most effective in relation to specific and general threats (DHS, 2007, p. 1). A plan to coordinate security efforts between the government and industry is also set forth. The plan recognizes an ever changing threat environment and the need for intelligence and proactive security measures. Emphasis is placed on TSA's Surface Transportation Security Inspection Program (STSI) and the Baseline Assessment and Security Enhancement (BASE) program. This document is revealing for its description of TSA's emphasis on its risk based risk management program, emphasis on TSIs and willingness to extend itself to the industry to develop security plans.

The document revealed TSA's emphasis on six transit security fundamentals. Recognizing what the TSA considers to be a security fundamental is important because it is predictive of where the TSA will direct its security resources. It follows that if these fundamentals are correct and complete, then TSA's allocation of resources will be well directed. If not correct and complete the TSA's allocation of resources may be misdirected. Therefore, the six fundamentals are noteworthy not only for what they include, but also for what they exclude, and are listed as follows:

1. Protection of high-risk underwater / underground assets and systems
2. Protection of other high-risk assets that have been identified through system- wide risk assessments.
3. Use of visible, unpredictable deterrence
4. Targeted counter-terrorism training for key front-line staff.
5. Emergency preparedness drills and exercises
6. Public awareness and preparedness campaigns. (DHS, 2007, p. 3)

D. U.S. GOVERNMENT REPORTS

U.S. government reports in the field can be grouped into two categories: reports issued by the United States Government Accountability office (GAO) and reports issued by the Department of Homeland Security Office of Inspector General (OIG). Combined, this literature paints a picture of TSA mass security programs focused on the largest mass transit properties operating underground rail service, with significantly less TSA controlled resources directed at other mass transit agencies.

One report issued by the DHS, OIG report of June 2008, OIG-08-66 addressed the *TSA's Administration and Coordination of Mass Transit Security Programs*. The focus in this report was TSA's management of its four major assistance programs for mass transit and the performance of these programs in meeting the needs of the five largest mass transit rail systems (OIG, 2008, p. 1). What is not said in this report is as important as what is said. In other words, the fact that the needs of the five largest transit systems were reviewed, and none of a medium sized transit agency, infers that the needs of Tier II agencies were not important enough to even be considered for review.

Other reports reviewed included the February 2009, DHS, OIG report OIG-09-24, on the *Effectiveness of TSA's Surface Transportation Security Inspectors*, and the June 2009 GAO report, GAO-09-491, entitled *Transit Security Grant Program, DHS Allocates Grants Based on Risk, but its Risk Methodology, Management Controls, and Grant Oversight Can be Strengthened*. Lastly, the GAO in June 2009 issued a report, GAO-09-678, entitled *Transportation Security, Key Actions Have Been Taken to Enhance Mass Transit and Passenger Rail Security, but Opportunities Exist to Strengthen Federal Strategy and Programs*. GAO noted that transit agencies had been conducting risk assessments of their own properties since 2004, and TSA could benefit from combining this information to conduct a risk assessment of the mass transit system. Furthermore, that TSA could also benefit from updating its strategy to include characteristics of other successful national strategies. These reports also revealed that TSA can improve certain aspects of each of its mass transit security programs. Significant weaknesses were found in TSA's STSIP and TSGP. It can also be concluded, in some instances or inferred in

other instances that TSA's four programs are weighted significantly in favor of the Tier I agencies. The weakness in this sub literature is that these government studies focused on large mass transit agencies with significant rail systems and deliberately did not include bus systems that more typically fall into the Tier II category, thus we must rely on inferences.

E. SECURITY REPORTS DEVELOPED BY THE PUBLIC TRANSPORTATION INDUSTRY

A body of relevant literature on the topic of mass transit security has existed for at least a decade before the creation of the TSA and the *Aviation and Transportation Security Act of 2001*. The Transit Cooperative Research Program (TCRP) is a key instrument for conducting transportation security research. The TCRP was proposed by the U. S. Department of Transportation (DOT) and established under the Federal Transit Administration (FTA) sponsorship in July 1992. The TCRP was authorized as part of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA).

More recently in 2007, the TCRB published Report 86, Public Transportation Security, volume 13, entitled, *Public Transportation Passenger Security Inspections: a Guide for Policy Decision Makers*. In 2009, the TCRB published Synthesis 80, *Transit Security Update a Synthesis of Transit Practice*. TCRB's publications provide a very basic description of terminology, security practices, and equipment applicable to mass transit security. This literature is not strategically oriented, has limited tactical applications, and does little to advance the primary research question.

F. WORK OF ACCREDITED SCHOLARS AND RESEARCHERS

The Norman Y. Mineta International Institute for Surface Transportation Policy Studies (MTI's) transportation policy work is centered on research, including transportation security, education, information, and technology transfer. MTI has conducted research on transportation security on topics ranging from passenger screening to designing and operating safe and secure systems, as well as protecting against terrorism and serious crime. MTI Report 04-05 entitled *Designing and Operating Safe*

and Secure Transit Systems: Assessing Current Practices in the United States and Abroad is an informative study of contemporary terrorist incidents, including the Irish Republican Army (IRA) bombing campaign in London prior to 2005, the Sarin chemical agent attack in Tokyo, and the attack on the Renfe subway system in Madrid among others. The work provides a chronology of terrorist events, describes lessons learned, and reports on transit security strategies in Paris, Tokyo, London, and Madrid. Particularly relevant to Tier II agencies, the report notes that, while the most dramatic attacks on mass transit have indeed occurred on major systems, this does not mean that local bus service or smaller cities are safe from attack (MTI, 2005, p. 7). This work is geared toward design and operations considerations and its focus is on rail systems security.

An earlier work by MTI, Report 01-07 dated September 2001, entitled, *Protecting Public Surface Transportation Against Terrorism and Serious Crime: Continuing Research on Best Security Practices*, reported on assaults on public transportation that were characterized at that time as continuing without indication of abatement (Jenkins & Gersten, 2001, p. 1). It examined security practices in Tokyo and London and in two California transit agencies (MTI, 2001, pp. 1–3). The strength of this study is the emphasis placed on the United Kingdom's (UK) history of addressing terrorism, which until the date of this study, was conducted primarily at the hands of the IRA and the need to adopt best practices. The weakness in the study is that even with the UK's exhaustive experience in dealing with the threat of terrorism it was unable to prevent the attacks on their system in 2005.

G. CONCLUSION

The literature reveals that the TSA was slow in shouldering its mandate for securing mass transit. Legislation was passed in 2001 and 2002 assigning the TSA responsibility for securing all modes of transportation. Still, 90 percent of TSA's budget was expended on aviation security (NCTA, 2004, p. 391). Acclaimed scholars had published in September of 2001 that terrorist assaults on mass transit were continuing without abatement. The 9/11 Commission Report, published in July 2004, noted that

despite deadlines, TSA had not developed an integrated strategic plan for the transportation sector, or specific plans for the various modes, such as mass transit (IRCA, 2007). Attacks on mass transit continued, including Madrid in March 2004, London in July 2005, and Mumbai in July 2006. TSA's efforts to secure mass transit were reactionary, and at the urgings of the Administration and Congress, rather than based on its own vision and strategy. Based on a review of the related subfields in the literature, it can reasonably be concluded that the programs the TSA has put into place to secure mass transit have been troubled in their own right, but are also geared in favor of a handful of Tier I transit agencies. Therefore, the literature indicates that the TSA is likely not meeting the terrorism security needs of mass transit agencies classified as Tier II agencies.

III. THE TRANSIT SECURITY GRANT PROGRAM

A. INTRODUCTION

This chapter is divided into 11 sections. Section A is the introduction, and Section B is intended to provide the reader with an explanation of the origins and administration of the Program. The requirements placed on the DHS-TSA for the TSGP under the Implementing Recommendations of the 9/11 Commission Act of 2007 is explained in Section C. Section D provides an explanation of the TSGP risk analysis model as a function of threat, vulnerability and consequence, the establishment of Tier I and Tier II regions based on the risk model, and challenges facing the TSGP revealed in the DHS OIG's June 2008 report. The DHS OIG's June 2009 report to the Congress that revealed an inability of the risk model to measure differences in vulnerability across regions is discussed in Section E. Section F describes the results of National Research Council of the National Academies review of the DHS' approach to risk analysis and its conclusion that only low confidence should be placed in most of the risk analysis conducted by the DHS. Interviewing data of Chiefs of Police of Tier I mass transit agencies is provided in section G. Section H is policy implications attributable to the Tier I Chiefs. Interviewing data of Chiefs of Police of Tier II mass transit agencies is provided in section I. Section J is policy implications attributable to the Tier II chiefs. Finally, Section K is a chapter summary, discussion and conclusions.

B. BACKGROUND

DHS began providing grant funding specifically for transit security in 2003 through the Urban Area Security Initiative (UASI) grant program (GAO, 2009a, p. 2). In 2003 and 2004, the UASI program distributed $65 million and $50 million, respectively in grant funds to mass transit and passenger rail agencies (GAO, 2009a, p. 2). In 2005, DHS established the TSGP to address the security needs of transit systems (GAO, 2009a, p. 2). The purpose of the TSGP is to protect critical surface transportation infrastructure and the traveling public from acts of terrorism, major disasters, and other emergencies

(GAO, 2009a. 2). The TSA assumed responsibility for the policy aspect of the program, such as establishing priorities in the fiscal year 2006 grant cycle (GAO, 2009a, p. 4). TSA initially allocated funds to a metropolitan region based primarily on that region's ridership (OIG,, 2008, p. 21). TSA then moved to a competitive process for mass transit agencies (OIG,, 2008, p. 21). The TSGP distributes funds to owners and operators of mass transit systems, which include intracity bus, commuter bus, ferries and all forms of passenger rail, including Amtrak and other systems. TSGP funding allocations for mass transit security have increased each year from 2006 to 2009, inclusive and totaled $1.156 billion (GAO, 2009a, p. 7). In FY '10, the TSGP funding allocation was $288 million, with $253 million to be distributed in FY 2010. (DHS, 2009, p. 7).

Responsibility for the administration of the TSGP has changed several times since 2003. From FY '03–FY '09, the DHS' Office of Domestic Preparedness administered the UASI grant program (GAO, 2009a, p. 8). During FY '06, the administration of the TSGP was transferred to the TSA and the Office of Grants and Training within DHS' Preparedness Directorate (GAO, 2009a, p. 8). TSA was responsible for establishing security priorities and developing the criteria for evaluating applications, while DHS' Office of Grants and Training was responsible for grant management (GAO, 2009a, p. 8). Under the *Post- Katrina Emergency Management Reform Act* of 2007, most offices within DHS' Preparedness Directorate were transferred to the Federal Emergency Management Agency (FEMA) (GAO, 2009a, p. 8). In FY '08, FEMA's Grants Program Directorate became responsible for the administration of the TSGP (GAO, 2009a, p. 8).

There are three stages of the TSGP grant cycle: allocation, award, and distribution (GAO, 2009a, p. 10). TSA grant guidance is created annually by the TSA and FEMA. The guidance provides an overview of the TSGP, the application materials needed to apply for funding under the program, and DHS management requirements (GAO, 2009a, p. 10).

It is too soon to judge the effectiveness of the TSGP. The GAO issued a report to Congress in April 2010, entitled *Surface Transportation Security, TSA Has Taken Actions to Manage Risk, Improve Coordination, and Measure performance, but Additional Actions would enhance its Efforts*. The report acknowledged the need for the TSA to

develop or enhance performance measures for the TSGP (GAO, 2010a). The TSGP lacked a plan and milestones for developing measures to track progress in achieving program goals (GAO, 2010a). Even though FEMA, who administers the grant program, reported that it was beginning to develop measures and that the agency had not collaborated with the TSA to produce performance measures for assessing the effectiveness of security projects funded by the TSGP (GAO, 2010a). The GAO suggested that effectiveness would include how the funding is used to help protect critical infrastructure and the traveling public from possible acts of terrorism (GAO, 2010a). The GAO recommended that the TSA and FEMA collaborate in developing such a plan to include milestones (GAO, 2010a, pp. 13–14).

C. IMPLEMENTING THE RECOMMENDATIONS OF THE 9/11 COMMISSION ACT OF 2007

Public Law 110-53, enacted on August 3, 2007, also known as *Implementing Recommendations of the 9/11 Commission Act* of 2007, placed several requirements on the DHS Secretary, and the TSA Administrator. Requirements included the establishment of a program for making grants to eligible public transportation agencies for security improvements (GAO, 2009a, p. 8). The DHS fulfilled this requirement by establishing the TSGP (GAO, 2009a, p. 8). The Act created requirements for the TSGP, including that recipients of public transportation funds be selected based on risk and that TSGP projects address items identified in security assessments or plans (GAO, 2009a, p. 8). The Act also outlined permissible use of the funds and limited the percentage of funds used for operational costs to 20 percent (IRCA, 2007). Lastly, the Act required reporting on how the TSGP awards address national transportation security goals (OIG, 2008, p. 21).

D. DHS' JUNE 2008 OFFICE OF INSPECTOR GENERAL'S (OIG) REPORT

The DHS OIG reviewed TSA's TSGP and identified challenges with the TSGP in its June 2008 report entitled *TSA's Administration and Coordination of Mass Transit Security Programs*. The review focused on how well the program was meeting the needs of the nation's five largest mass transit agencies (OIG, 2008, p. 1). The OIG found that

the TSA and mass transit agencies disagree on the best approach for allocating funds and prioritizing projects (OIG, 2008, p. 21). The result has been that the TSA has made many changes to the program and has been unable to develop a workable solution (OIG, 2008, p. 21). Consequently, mass transit agencies have become frustrated and raised concerns over the TSA's inconsistent and unpredictable processes (OIG, 2008, p. 21).The TSA's solution has been negotiated agreements with stakeholders (OIG, 2008, p. 21). The OIG noted that the TSA's current strategy of negotiated agreements may not provide sufficient documentation to evaluate the basis for TSA's grant decisions (OIG, 2008, p. 21).

The OIG noted as an example of the TSA's inconsistent priorities, in 2006, after mass transit agencies submitted their FY '06 TSGP grant applications the agency changed its priorities (OIG, 2008, p. 22). Due to the changed priorities the TSA denied projects that fell within the original application guidelines. Furthermore, some partially completed security projects from previous grant cycles were unfunded because of the changes. Changing priorities also made security planning more difficult (OIG, 2008, p. 22).

Mass transit agencies also complained about the TSA's unreasonably short deadlines for submitting grant proposals and an unrealistic performance period of 36 months for spending the award money (OIG, 2008, p. 22). They also complained about the TSA's slow award process (OIG, 2008, p. 22). The FY '06 TSGP was also plagued with other problems. Tier I Regional Transit Security Working Groups did not allocate spending decisions based on risk and project proposals did not reflect the TSA's priorities (OIG, 2008, p. 23). Many Regional Transit Security Working Groups simply divided funds, so that most systems regardless of size or risk, received at least one funded project. The TSA did not integrate asset-specific information into grant guidelines and priorities. Many mass transit officials said that TSA's risk management approach did not take into account the differences in the infrastructure and needs of cities and their transit agencies (OIG, 2008, p. 23).

The TSA modified the TSGP grant approval process somewhat for FY '07, but many of the old problems remained (OIG, 2008). The '07 process may not have generated an adequate written record of how grants were prioritized or awarded (OIG,

2008). Awards may not have been based on objective grant eligibility criteria, resulting in personality-driven decisions, or no decisions at all (OIG, 2008, p. 25). Without objective criteria for grant awards or a transparent process, the OIG noted that it would be difficult for an outside observer to determine how and why a grant decision was determined (OIG, 2008, p. 25).

The OIG recommended that the TSA adopt a process for incorporating asset specific risk and vulnerability assessments into grant decisions and a forum for stakeholders to evaluate whether TSA's grant strategy addresses mass transit agency's highest priority security needs (OIG, 2008, p. 25). The OIG opined that this would enable the TSA to develop a more objective and responsive grant process (OIG, 2008, p. 25). The OIG also recommended that the TSA report to Congress on each grant recipient's assessment of the grant application and award process (OIG, 2008, p. 26). The TSA concurred with the first recommendation and concurred in part with the second (DHS, 2008, p. 26).

E. GAO'S JUNE 2009 REPORT ON THE TSGP AND RISK METHODOLOGY

In June 2009, the GAO issued a report entitled, Transit Security Grant Program, DHS Allocates Grants Based on Risk, but its Risk Methodology, Management Controls, and Grant Oversight can be Strengthened. Among other items the report addressed the extent to which TSGP funds are allocated and awarded based on risk (GAO, 2009a, p. 3). The GAO reported that the DHS develops risk scores using the TSGP risk analysis model in order to identify the highest-risk regions and the transit agencies within those regions that are eligible for funding (GAO, 2009a, p. 12). The National Infrastructure Protection Plan (NIPP) updated in 2009, defines risk as a function of three elements: threat, vulnerability, and consequence GAO, 2009b, p. 14). Threat is an indication of the likelihood that a specific type of attack will be initiated against a specific target or class of targets (GAO, 2010a, pp. 3–4). Vulnerability is the probability that a particular attempted attack will succeed against a particular target or class of targets (GAO, 2010a, pp. 3–4). Consequence is the effect of a successful attack (GAO, 2010a, pp. 3–4). The

TSGP risk model accounts for risk to both intracity rail, subway and commuter rail and bus systems (GAO, 2009a, pp. 51–52). The rail and bus scores are combined to determine the total risk for the region (GAO, 2009a, pp. 51–52). Within each mode, the threat index, based upon classified data, accounts for 20 percent of the total risk score and the vulnerability and consequence indexes account for 80 percent (GAO, 2009a, pp. 51–52). In the rail mode, the vulnerability and consequence index is divided equally between the population index, a function of passenger trips, and the national infrastructure index, which is a function of underground track miles and underwater structures like tunnels (GAO, 2009a, pp. 51–52). In the bus mode, the vulnerability and consequence index is a function of the population index / passenger trips (GAO, 2009a, pp. 51–52).

These regions are either placed into Tiers I or II, based on their risk scores, to determine initial TSGP funding allocations (GAO, 2009a, p. 12). The allocations may change based upon DHS' review of the projects submitted for award. DHS determines the regions at the highest risk of a terrorist attack and selects transit agencies within those regions eligible to receive Tier I funding (GAO, 2009a, p. 12). Each Tier I region is given a target allocation based on its share of risk as determined by DHS' risk model (GAO, 2009a, p. 12).

Lower-risk regions and certain transit agencies in those regions make up the Tier II group (GAO, 2009a, p. 12). Eligible Tier II transit agencies are determined by using FTA's National Transit Database, which identifies transit agencies by ridership (GAO, 2009a, p. 12). Transit agencies that are not in the top 100 for passenger trips are not eligible for funding (GAO, 2009a, p. 12). The Tier II allocation is a set amount of funding allocated for all Tier II regions combined (GAO, 2009a, p. 12). Tier II mass transit agencies apply for funding in competition with other Tier II agencies (GAO, 2009a, p. 12).

Using the TSGP risk model, mass transit agencies were grouped as either Tier I or Tier II, based on the risk of a terrorist attack occurring within a region. Funding was allocated to the regions based upon risk (GAO, 2009a, p. 18) In FY '07, Tier I represented approximately 80 percent of the total risk of all regions. Tier II represented the other 20 percent (GAO, 2009a, p. 18). In FY '08, Tier I represented 93 percent of the

total risk of all regions, and Tier II represented 7 percent (GAO, 2009a, p. 18). The GAO analysis showed that for fiscal years 2007 and 2008, almost 90 percent of TSGP funds were allocated to Tier I agencies (GAO, 2009a, p. 18). Tier II mass transit agencies received approximately 10 percent of the TSGP funds (GAO, 2009a, p.18). TSA worked closely with Tier I mass transit agencies to develop security projects (GAO, 2009a, p. 18). TSGP grant guidance permits TSA to transfer funds between Tier I regions if one region's security projects are superior to another (GAO, 2009a, p. 18). The guidance also enables the TSA to transfer TSGP funds from Tier II to Tier I regions if the TSA is not satisfied with the quality of the grant proposals submitted by Tier II agencies (GAO, 2009, p. 18). TSA reported to the GAO that many Tier II agencies' grant proposals were denied due to the poor quality of the proposals (GAO, 2009a, p. 18). In FY '08, Tier I gained an additional $13.7 million from Tier II regions (GAO, 2009a, p. 19). In FY '10, TSGP funding was allocated with $225.7 million for eight mass transit agencies in eight Tier I urban areas, and $27.3 to be competed for by mass transit agencies in 51 urban areas (DHS, 2010, p. 7).

TSGP projects are prioritized based on six transit security fundamentals that form the foundation of a successful security program. They include:

1. Protection of high risk underwater / underground assets and systems
2. Protection of other high-risk assets that have been identified through system wide risk assessments
3. Use of visible unpredictable deterrence
4. Targeted counterterrorism training for key frontline staff
5. Emergency preparedness drills and exercises; and
6. Public awareness and preparedness campaigns (GAO, 2009a, p. 9).

GAO's report to Congress expounded on Risk Management practices associated with the TSGP. The report noted that Congress, the President, the Secretary of Homeland Security, GAO and others have endorsed Risk Management as a way to direct finite resources to areas that are most at risk of terrorist attack (GAO, 2009a, p. 9). The GAO reported that DHS uses a risk model to help determine which mass transit agencies are eligible for TSGP funds (GAO, 2009a, p. 9). Furthermore, that TSA and FEMA

share responsibility for the TSGP risk model, with TSA providing most of the data inputs to the model, which is managed by FEMA (GAO, 2009a, p. 9). The TSGP's risk methodology is similar to the methodology used to determine eligibility for other DHS state and local grant programs (GAO, 2009a, p. 9).

Concerning the first question posed by the Congress on the extent to which TSGP funds are allocated and awarded based on risk, the GAO reported that the TSGP incorporates elements of risk (GAO, 2009a, p. 16). However, the GAO said that the risk model could be strengthened to measure variations in vulnerability (GAO, 2009a, p. 16). Not measuring differences in vulnerability, limits the model's ability to assess risk (GAO, 2009a, p. 16). The report noted that the DHS did not measure vulnerability for each region and the associated transit agencies in the model (GAO, 2009a, p. 16). The DHS said it did not measure regional and transit agency vulnerability because it lacked data on the differences in vulnerability among transit agencies (GAO, 2009a, p. 16). Therefore the DHS decided to hold this variable constant in the risk formula (GAO, 2009a, p. 16). The GAO noted that holding vulnerability constant may be problematic and it gave an example where a region may be highly vulnerable to one mode of attack but have a low level of vulnerability to another depending on a variety of factors such as countermeasures already in place (GAO, 2009a, pp. 16–17).

TSA officials acknowledged the shortcoming in their risk model but cautioned that measuring variations in vulnerability would require time and resources (GAO, 2009a, p. 17). TSA officials said that they were considering using vulnerability assessments conducted by transit agencies as the source of the vulnerability data (GAO, 2009a, p. 17). To do this it was acknowledged that TSA must be able to consistently compare assessments across agencies and regions (GAO, 2009a, p. 17). This would be difficult given the variations in scope and methodology of these assessments (GAO, 2009a, p. 17). A TSA official indicated that the TSA is considering looking into past vulnerability assessments and its Baseline Assessment for Security Enhancement (BASE) reviews for vulnerability information that might be used in the model (GAO, 2009a, p. 17). TSA officials also acknowledged that they consider ridership to be the major known vulnerability factor (GAO, 2009a, p. 17). The GAO reported that one TSA official

remarked that ridership represents the number of people exposed to an attack, which is a proxy for the openness of the system, station, or both (GAO, 2009a, p. 17). However, the risk model also uses ridership to measure consequence, so its link to vulnerability does not add additional information about how risk may vary across regions (GAO, 2009a, p. 17). The GAO pointed out that without accounting for variations in vulnerability, the effectiveness of the risk analysis model may be limited in that it may not fully consider important differences in regions and transit systems that could affect their vulnerability to attack and the risk scores may not be as precise (GAO, 2009a, p. 17). The GAO went on to say that a more precise risk analysis could affect the allocations of funds to Tier I or Tier II regions because allocation is determined in part by the risk share (GAO, 2009a, p. 17).

A key recommendation of the GAO's report was that in order to strengthen DHS' methodology for determining risk, the Secretary of Homeland Security should develop cost effective methods for incorporating vulnerability information into future iterations of the TSGP risk model (GAO, 2009a, p. 40). The DHS concurred with the recommendation and said that it would make appropriate adjustments in the fiscal year 2010 grant cycle (GAO, 2009a, pp. 40, 41).

F. NATIONAL RESEARCH COUNCIL 2010 REVIEW OF DHS APPROACH TO RISK ANALYSIS

Pursuant to the Consolidated Appropriations Act of 2008 the U.S. Congress requested the National Research Council (NRC) of the National Academies to review and assess the activities of DHS related to risk analysis (NRC, 2010). Over a 15 month period, the NRC's full committee met five times and subgroups of the committee met another 11 times with DHS officials and representatives of a variety of organizations to gather information (NRC, p. vii) Specifically, the purpose of the committee was to review the DHS' approach to risk analysis to assess how the department is building its capabilities in risk analysis to inform decision-making (NRC, 2010, p. 1).

The NRC noted that DHS leadership made a stated commitment to processes and methods that feature risk assessment as a critical component for improved decision-

making (NRC, 2010). However, the difficulties in developing a risk-based framework and activities for decision making across DHS are daunting, largely due to the great uncertainties in understanding the suite of threats (NRC, 2010). The NRC also took note of the fact that DHS is responsible for all hazards including natural disasters like hurricanes, but focused its report on terrorism because that is where DHS' efforts are weighted (NRC, 2010, p. vii).

At DHS, risk analysis is used to inform decisions ranging from high-level policy choices to small scale protocols that guide the minute by minute actions of DHS employees. (NRC, 2010, p. 1) The results of the NRC's review indicates that DHS practices related to risk analysis have been flawed (NRC, 2010). The NRC ultimately concluded that until DHS' deficiencies are improved, only low confidence should be placed in most of the risk analyses conducted by DHS (NRC, 2010, p. 11).

With the exception of risk analysis for natural disaster preparedness, which is near state of the art, the committee did not find any DHS risk analysis capabilities and methods that are yet adequate for supporting DHS decision making, because their validity and reliability are untested (NRC, 2010). Nor does the DHS appear to be on a path for development of those methods and capability (NRC, 2010, pp. 2–4).

The NRC supported its conclusion on the fact that the DHS has not been following critical scientific practices of documentation, validation, peer review by technical experts external to DHS, and publishing (NRC, 2010). With this lack of a disciplined approach it was very difficult to know with precision how DHS risk analyses are being done and if their results are reliable and useful in decision-making (NRC, 2010). Furthermore, the NRC stated that there is little understanding of the uncertainties in DHS risk models other than those for natural hazards, and in addition there is a tendency toward false precision (NRC, 2010). The committee found that in general the models it reviewed did not have the capability to appropriately represent and analyze risks from across the department's spectrum of activities and responsibilities (NRC, 2010). The committee often found that little direct effective attention was paid to the features of the risk problem that are fundamental to the homeland security modeling purview (NRC, 2010). The committee was concerned about the lack of a state-of-the-art

risk modeling for addressing key homeland security issues such as vulnerability, intelligent adversaries, and the range of socioeconomic consequences (NRC, 2010, pp. 11, 12).

With regard for Infrastructure Risk Analysis in relation to the risk from terrorism, defining the threat and estimating probabilities are inherently challenging because of the lack of experience with such events; the associated absence of data on which to base reliable estimates of probabilities; and the effect of an intelligent adversary that may seek to defeat preparedness and coping measures (NRC, 2010, p. 4). The committee recommended that DHS consider the adaptability of intelligent adversaries, consistently include evaluation of non-physical vulnerabilities, and characterize sources of uncertainty, working toward verification and validation of models, improving documentation, and by submitting models and analyses to external peer review (NRC, 2010, p. 5). In 2007, TSA initiated but then discontinued an effort to conduct a comprehensive risk assessment for the entire transportation sector (NRC, 2010). The effort was known as the National Transportation Sector Risk Analysis (NRC, 2010). TSA intended to estimate the threat, vulnerability, and consequence of a range of hypothetical attack scenarios and integrate these estimates to produce risk scores for each scenario that could be compared between each of the modes of transportation (NRC, 2010). TSA discontinued the work due to difficulties in estimating the likelihood of terrorist threats (GAO, 2010a, p. 5).

With regard to Homeland Security Grants the committee concluded that population counts serve, for the most part, as the surrogate measure for risk (NRC, 2010). Some of the grants programs are moving toward risk-based decision support, but the various approaches and formulas are still evolving (NRC, 2010). The committee recommended that FEMA undertake an external peer review by technical experts outside DHS of its risk informed formulas for grant allocation to identify any logical flaws with the formulas, evaluate the ramifications of the choices of weightings and parameters in the consequence formulas, and improve the transparency of these crude models of risk

(NRC, 2010). The committee further recommended that FEMA become explicit about using population density as the primary determinant for grant allocations (NRC, 2010, p. 6).

G. INTERVIEWS OF CHIEFS OF POLICE FROM TIER I MASS TRANSIT AGENCIES

In order to conceptualize the issues associated with this program, Chiefs of Police from Tier I and Tier II mass transit agencies were interviewed for their first hand subject matter knowledge. These security professionals provided information and expert opinion that expanded upon what was available from open source materials. The interviews provided context to the U.S. government reports and open source data, and helped to shape the policy options presented in a later section of the thesis.

The three Chiefs of Police of Tier I transit agencies were asked the following questions during their interviews:

> Please describe how your mass transit agency applies the TSA's Transit Security Grant Program (TSGP) to your agency's Security efforts. What is good about the program, and how can it be improved? What recommendations can you make to Tier II mass transit agencies concerning this program? Follow up questions were asked as appropriate for clarification and/or expansion of the Chief's response. Responses were grouped into broad categories, including: Application of the program to their own agencies; Positive aspects of the program; Recommendations for Tier II agencies; Program criticisms; and Recommendations for overall program improvement.

First, on the broad question of how the agency applies the TSGP to its own security efforts, the three Tier I chiefs who were interviewed all participate in the TSGP. They participate successfully and have made significant security improvements for their mass transit agencies through funding provided by the TSGP.

One chief was able to hire 12 new law enforcement officers through operations packages offered as part of the TSGP and the supplemental TSGP ARRA funding. Veteran law enforcement officers were assigned to new anti-terrorism teams and the veterans were replaced with new hires. A top TSGP priority now is security hardening of

bridges and tunnels and previously was training of front line employees. Therefore, employee security training and hardening of infrastructure security were also accomplished.

A second Tier I chief reported that the TSGP enabled his mass transit agency to receive funding for 20 new law enforcement officers for newly formed anti-terrorism teams to perform high-visibility patrols. The TSGP has worked extremely well for this chief's mass transit agency. The mass transit agency has used the BASE reviews and threat and vulnerability studies to provide support and justification for TSGP security improvement projects. The outcome is that the TSGP has contributed to improving the security of the mass transit agency. Specific security improvements include infrastructure hardening by enhanced lighting, installation of security cameras and chemical detection systems, employee training, and the development of emergency procedures. According to the chief, the nucleus of the improvements have been training for front line employees, reimbursement for backfilling employees and employee overtime, drills exercises, and EDCTs.

A third Tier I chief reported that the TSGP worked well for his mass transit agency, and overall, he is very pleased with the program. The bulk of his mass transit agency's TSGP funding has been applied to infrastructure security improvements. Specific improvements include perimeter fencing, security cameras, lighting, underwater protection, and employee training. The chief noted that his mass transit agency transports large numbers of passengers through underwater tunnels.

This chief was also able to hire 12 new law enforcement officers through operations packages (OPacks) for anti-terrorism teams offered as part of the TSGP. One six-officer team is used to conduct high visibility random patrols. The other six-officer team is used to for security inspections.

Despite the positive aspects of the TSGP, there were also criticisms or concerns about the program. One Tier I chief is concerned about the inconsistency of the TSGP. He noted that the urban area never knows how much funding will be allocated per year, and TSA's priorities change quickly. The inconsistency causes mass transit agencies to

be reluctant to start a long-term project. The priority now is hardening bridges and tunnels, but previously it was front line training. The chief would like to see funding amounts and priorities more predictable to better enable project planning. Sustainability of these security projects over the long-term is another concern. in addition, the chief is concerned that the TSA has placed so much emphasis on protection of infrastructure that the human elements for security, which the operational packages for anti-terrorism teams provide, have become secondary. The chief noted, in his opinion, that uniformed law enforcement officers are the best deterrence against terrorism.

A second chief advised that the most difficult aspect of the TSGP is moving the security project from award to project completion in a reasonable time period. Historical Preservation and Environmental Impact reviews, coupled with the routine procurement process, make the timely completion of projects challenging. There have been times when the mass transit agency has been criticized for being unable to spend its grant money within a reasonable period; however, the TSA has taken measures to improve the process by distributing funds directly to the mass transit agency rather than through a state administrative agent. With that change, the chief expects that concern to be somewhat lessened.

A third Tier I chief considers bureaucracy in the program as a continuing problem. It takes much too long to take a project from concept to reality. Contributory factors include the environmental impact and historical preservation statutory requirements. It can take two or three years to complete these reviews, and therefore, painstaking to spend the TSGP funds.

The Tier I chiefs had recommendations for improvement of the TSGP on the whole rather than specifically for Tier II agencies. One chief would have the TSGP allocate more funding for human security than is allocated currently. The chief does not recommend allocating more funding for human resources than physical security improvements, but he does recommend investing more into human resources than is now being invested. He noted that the TSA also needs to recognize that when crime is prevented, terrorism is also prevented. To focus only on terrorism is not facing reality.

He deeply appreciates the federal assistance and enjoys a good relationship with the TSA, but it needs to begin thinking out of the "bureaucratic box."

A second Tier I chief is concerned with the idea of allocating all of the TSGP funds for 62 critical national assets across the country as the basis for all of the FY 2011 funding. This would leave little to no funding for Tier II mass transit agencies. He believes that not only Tier II regions should be concerned about the idea but Tier I regions as well. This chief is of the opinion that terrorists will seek to penetrate the weakest link in the security chain and all of the mass transit agencies are linked. With this in mind, the chief believes the TSA needs to move more to a regional approach for mass transit security and consider more deeply the security of the smaller agencies that are linked to larger mass transit agencies.

The same chief believes that investing in people is a better security investment than investing in infrastructure protection. Specifically, he noted that employee training; public awareness campaigns, and security drills are a better investment of TSGP funds than infrastructure protection. The chief advised that a good public awareness campaign is like adding hundreds of thousands of security partners. He noted that recently a Times Square street vendor was the first to detect an improvised explosives device threat in New York City.

A third Tier I chief reported that he the TSA would improve the TSGP by making the grants more flexible, by making them more specific to the individual mass transit agencies. Furthermore, he noted that TSGP could be improved to more fully address sustainment of security improvements. In these tough economic times, the mass transit agencies do not have discretionary funds for sustainment. He further advised that security will always take a back seat to transportation in rank of priority for mass transit agencies when there is competition for funds. TSGP grant guidance needs to address this reality. He understands that the grand money is not guaranteed for the long-term and the federal government would prefer to wean mass transit agencies off the grant funds; however, there needs to be some balance on this issue.

This chief advised that the TSA espouses the philosophy that high visibility unpredictable deterrence as the number one means of protection from terrorism. With the current economic conditions transit agencies cannot afford to hire law enforcement officers to support this philosophy. The chief is of the opinion that the TSA needs to stand up for what it believes in and support the deployment of more law enforcement officer for high visibility unpredictable patrols for mass transit agencies. The Chief noted that presently TSGP funds are allocated 90 percent toward infrastructure and 10 percent toward operations support based on congressional mandate. This needs to change, and the TSA needs to convey this philosophy to the Congress to make it happen. In light of this idea, the chief recommends that the TSA develop its own community oriented policing (COPS) style grant for mass transit agencies, similar to, but separate from the COPS grant administered by the U.S. Department of Justice.

H. POLICY IMPLICATIONS ATTRIBUTABLE TO INTERVIEWS OF TIER I CHIEFS OF POLICE

1. Implications for TSGP Effectiveness for Tier I

Policy implications associated with the overall effectiveness of the TSGP for Tier I agencies are evident from the interview data, even though all three Tier I mass transit agencies reported successful participation in the TSGP, from infrastructure security improvements to the hiring of law enforcement officers (LEOs) for human security. Administrative problems contribute toward diminished effectiveness. The inconsistency of the TSGP causes mass transit agencies to be reluctant to start long-term projects. Urban areas never know how much funding will be allocated per year, and TSA's priorities change quickly. Sustainability of these security projects over the long-term is also a concern, and the TSGP could be improved to more fully address this concern. The most difficult aspect of the TSGP is moving security projects from award to project completion in a reasonable time period. Historical Preservation and Environmental Impact reviews, coupled with the routine procurement process, make the timely

completion of projects challenging and bureaucracy in the program is a continuing problem. It can take two or three years to complete this review, and therefore, much too long to take a project from concept to reality.

2. Implications for Increasing LEOs

Policy implications associated with increasing the number of LEOs are also evident from the interview data. The data calls into question whether the balance of funding investments between infrastructure security improvements and investments in human security is appropriate. Between the three chiefs, they had hired 44 additional LEOs by taking advantage of operations packages (OPacks) that are offered only to Tier I mass transit agencies. Notably, each Tier I chief expressed concerns over the emphasis placed on infrastructure security improvements in contrast to investments in human capital, and all agree that more funding should be allocated toward investments in human security. One chief was concerned that human elements for security have become secondary. Another chief would recommend increasing funding for human security beyond current allocations. A third noted that high visibility unpredictable patrols are a top priority of the TSA and are considered to be the number one protection from terrorism. With current economic conditions, mass transit agencies cannot afford to hire LEOs. Therefore, the TSA needs to convey this message to Congress and should develop its own COPS style grant program for mass transit on the order of the COPS grant program administered by the DOJ.

3. Implications for the STSIP

One chief noted that his mass transit agency has used the BASE reviews and threat and vulnerability studies to provide support and justification for TSGP security infrastructure projects. The implication is that BASE reviews and vulnerability studies are important contributing factors toward TSGP security infrastructure projects.

I. INTERVIEWS OF CHIEFS OF POLICE FROM TIER II MASS TRANSIT AGENCIES

Of the seven Chiefs of Police of Tier II transit agencies who were interviewed, all were asked the following question:

> Please describe how your mass transit agency applies the TSA's Transit Security Grant Program (TSGP) to your agency's Security efforts. What is good about the program, and how can it be improved? Follow up questions were asked as appropriate for clarification and/or expansion of the Chief's response. Responses were grouped into four broad categories: Application of the program to their own agencies; Positive aspects of the program; Program criticisms; and Recommendations for overall program improvement.

First, on the broad question of how the agency applies the program to its own security efforts, five of the seven Tier II chiefs who were interviewed reported successful participation in the TSGP.

Concerning the positive aspects of the program, at the low end of success one reported some improvements in security as a result of the TSGP. Another described the TSGP as helpful, but not in delivery of its full potential impact. A third chief acknowledged that the TSGP has enabled his department to make security upgrades that the agency would otherwise have been unable to make. Another chief advised that the TSGP has enabled his mass transit agency to advance its security posture to a level that would have never been achieved without the program. The fifth chief advised that overall the TSGP has improved the security of his mass transit agency by providing funding for training, exercises and equipment. The agency has also significantly increased its numbers of security cameras.

While most of the chief's reported some success with the TSGP, there were also significant criticisms of the program. A chief expressed exasperation at seeing most of the TSGP funding allocated to Tier I agencies. This chief is concerned over the possibility that the next terrorist attack will be against mass transit in a Tier II region where the security infrastructure is not in place, due to a lack of TSGP assistance. A second chief was of a similar view indicating, that the current allocation of resources

between Tier I and Tier II mass transit agencies is neither fair nor equitable. Two other chiefs were of the opinion that the funding available to Tier I regions versus Tier II is out of balance.

A chief advised that the TSGP has provided his mass transit agency with the opportunity for security improvements on the technical side such as security cameras and weapons of mass destruction (WMD) detection equipment. The TSGP has enabled his mass transit agency to procure cameras to a level that the agency can no longer provide technical support. The security functions the agency can no longer support include the viewing, maintenance, and downloading of data with the existing personnel staffing levels. All of these security systems require human support; however, because of the harsh economic conditions and a cutback in personnel resources, his agency's executive management has advised against the procurement of additional security systems without funding for personnel to support the security systems. The chief is left with the choice of either no additional technical security improvements or trading police officer positions for security technician positions in order to operate and maintain current and additional technical security systems. The chief advised that he could not justify trading police officer positions for technical support positions.

Another chief described the TSGP administrative process as cumbersome, difficult, and lengthy. Due to limited personnel resources, the chief functions as his departments only grant writer. TSA's priorities change from year to year making it difficult for him to follow through on security projects initiated with TSGP grant funding. He expressed concern over security priorities being set at the federal level. He believes that his agency's security priorities should be addressed first, rather than national priorities. Other TSGP requirements like environmental and historic preservation issues are overly burdensome requiring excessive proof of compliance even with simple projects like changing the locks on doors. He believes that the TSA needs to reduce the TSGP's administrative burden and make it a less complex and more streamlined process. This chief was also highly critical that OPacks are not available to Tier II mass transit agencies, and the one time that they were, under the *TSGP American Recovery and Reinvestment Act* (ARRA) grant, they were required to have 100 sworn law enforcement

officers in order to compete for the OPacks that fund the hiring of police officers for antiterrorism initiatives. Another chief noted that the short lead-time for responding to the TSGP grant application deadline is a problem. If a mass transit agency does not have a project ready for proposal, it is very difficult to formulate one by the deadline. If more grant funding was available to his agency, he would use more to improve his security capacity.

Another chief advised that the TSGP's relatively small allocation of funding to Tier II mass transit agencies, in contrast to what is allocated to Tier I regions, limits the overall utility of the program within Tier II agencies. The chief credits TSA representatives to mass transit agencies with giving Tier II agencies some flexibility within the TSGP guidelines, but overall, the TSGP could better serve Tier II mass transit agencies with a larger allocation of funds.

This chief was particularly dismayed with the 2009 TSGP ARRA grant, which enabled the hiring of law enforcement officers for anti-terrorism, but limited participation to transit agencies with departments of 100 or more sworn law enforcement officers. The chief's transit agency is growing significantly. The chief is attempting to expand his police department to service his growing transit agency, but he does not have 100 officers at this time. Therefore, his mass transit agency was restricted from participating in the ARRA grant even though he considers his agency to be very much in need of the anti-terrorism resources. The chief questioned why the TSGP makes it difficult to help a smaller agency. The chief noted that although his transit agency does not transport as many passengers by rail as a Tier I transit agency, his transit agency's train cars are filled with passengers nonetheless, and they therefore also offer an attractive target to terrorists, like any Tier I mass transit agency.

The Tier II chiefs had recommendations for improvement of the TSGP. Five of the seven chiefs interviewed recommended that the pre-condition for Tier II transit agencies to have police departments composed of at least 100 officers in order to apply for OPacks (anti-terrorism teams consisting of 4 law enforcement officers) be discontinued. When authorized, OPack should be extended from 36 months to 60 months. Furthermore, one chief recommended authorizing grant funding not only for

police officers but also for personnel to provide support to technical security systems like WMD detection equipment and security camera systems. Five Tier II chiefs also recommended that the allocation of funding to Tier II mass transit agencies be increased.

Likewise, five of the seven chiefs suggested ideas for improving the administrative aspects of the TSGP to better serve the needs of Tier II mass transit agencies. One chief is of the belief that because of the administrative burdens, many Tier II agencies do not apply for the funding they otherwise would apply for. Three chiefs recommended that national priorities not be changed so often to enable mass transit agencies to plan their security improvements in advance and for the long-term. They noted that prior to each year's TSGP introductory grant guidance mass transit agencies do not know what the grant priorities will be. Therefore, it is difficult to plan and prepare security improvements and grant projects in advance. Another chief recommended that Tier II mass transit agencies should be treated more like Tier I regions by being assigned a specific grant award, rather than competing for the award. This may result in smaller more consistent awards year in and year out but would enable the Tier II agencies to plan for the long-term. Presently, Tier II regions have less time to develop projects, without knowing what the priorities will be, no guarantee of being awarded the grant, and no guarantee they can build on to a project in follow up years. Therefore, the TSGP is very difficult for Tier II agencies to plan for and work with over the long-term, and should be modified to enable Tier II agencies to build security capacity on a consistent long-term basis.

J. POLICY IMPLICATIONS ATTRIBUTABLE TO INTERVIEWS OF TIER II CHIEFS OF POLICE

1. Implications for TSGP Effectiveness for Tier II

Policy implications associated with the overall effectiveness of the TSGP for Tier II agencies are evident from the interview data. Most Tier II mass transit agencies also reported successful participation in the TSGP. The TSGP has been used for security improvements that would otherwise been unachievable; however, most Tier II chiefs were frustrated over the imbalance in funding between Tier I and Tier II mass transit

agencies and concerned that terrorists could also target their regions, and they may not be adequately prepared. They would like to see TSGP funding increased for Tier II mass transit agencies.

Administrative problems contribute toward diminished effectiveness. Tier II chiefs voiced concerns over the TSGP that were consistent with Tier I chief' s concerns and those reported by the DHS OIG in its 2008 report, including a cumbersome, difficult, and lengthy process; an inconsistent and unpredictable process; inconsistent priorities; and unreasonably short deadlines.

2. Implications for Increasing LEOs

Policy implications associated with increasing the number of LEOs are also evident from the interview data. There was large frustration that OPacks were made available to Tier II mass transit agencies only on a one time basis under the ARRA supplemental grant, but that even then the OPacks were limited to Tier II mass transit agencies with at least 100 LEOs. Tier II chiefs would like to see OPacks available to Tier II mass transit agencies with no restrictions on the basis of size of the sworn security forces. Tier II chiefs that are attempting to expand their departments in spite of staff reductions are frustrated over these restrictions.

Mass transit agencies have reached the point where they can no longer invest in infrastructure security improvements without increasing human resources. Because of the harsh economic conditions and a cutback in personnel resources, one agency's executive management has advised against the procurement of additional security systems without funding for personnel to support the security systems. The chief is left with the choice of either no additional technical security improvements or trading police officer positions for security technician positions in order to operate and maintain current and additional technical security systems. The chief advised that he could not justify trading police officer positions for technical support positions. The implication here again is that more resources need to be directed toward human sources of security including LEOs.

K. CHAPTER SUMMARY, DISCUSSION AND CONCLUSIONS

The TSGP was established by the DHS in 2005 for the purpose of addressing the security needs of transit systems, even though the DHS had been providing grant funding for transit security since 2003 through the Urban Area Security Initiative (UASI) grant program GAO, 2009a, p. 2). The purpose of the TSGP is to protect critical surface transportation infrastructure and the traveling public from acts of terrorism, major disasters, and other emergencies GAO, 2009a, p. 2). Funding allocations for mass transit have increased each year from 2006 to 2009, inclusive, and totaled $1.156 billion (GAO, 2009a, p. 7). In FY '08, FEMA's Grants Program Directorate became responsible for the administration of the TSGP, and grant guidance is created annually by the TSA and FEMA GAO, 2009a, p. 8). TSA initially allocated funds to a metropolitan region based primarily on that region's ridership OIG, 2008, p. 21) The *9/11 Commission Act* of 2007 required that recipients of public transportation funds be selected based on risk, and outlined permissible use of the funds and limitations on the percentage of funds used for operational costs (IRCA, 2007). Currently, the DHS identifies the highest risk regions and the transit agencies within those regions that are eligible for funding based on a risk analysis model (GAO, 2009a, p. 12). The model defines risk as a function of three elements, threat, vulnerability, and consequence. The regions are placed into Tiers I or II based on their risk scores to determine initial funding allocations (GAO, 2009a, p. 12). Tier I is allocated a target allocation based on its share of risk as determined by the risk model (GAO, 2009a, p. 12). Tier II allocations are a set amount of funding for all Tier II regions combined (GAO, 2009a, p. 12). Tier II mass transit agencies apply for funding in competition with other Tier II agencies (GAO, 2009a, p. 12).

In 2008, the DHS OIG found the TSA and mass transit agencies in disagreement on the best approaches for allocating funds and prioritizing projects. Changes were made without developing a workable solution (OIG, 2008, p. 21). The TSA has been accused of having an inconsistent and unpredictable process including inconsistent priorities, unreasonably short deadlines, an unrealistic performance period, and a slow award process (OIG, 2008, pp. 22, 23). Mass transit officials said the risk model did not take into account the differences in the infrastructure and specific needs in their cities and

transit agencies. Other problems included inadequate record keeping on how grants were prioritized or awarded, and questions arose over whether awards were based on objective criteria or were personality driven (OIG, 2008, p. 25). In 2009, the GAO noted that Congress, the President, the DHS, and the GAO have endorsed risk management as a way to direct finite resources to regions most at risk of terrorist attack (GAO, 2009a, p. 9). However, the GAO found that the DHS risk model used for the TSGP did not measure vulnerability for each region and the associated transit agencies (GAO, 2009a, pp. 16, 17). The DHS did not have data on the differences in vulnerability among transit agencies, and therefore the DHS held the vulnerability variable as a constant in the risk formula 2009a, pp. 16, 17). The GAO noted that based on this shortcoming, the risk model may be limited in that it does not consider important differences in regions and transit systems, and that a more precise model could effect the allocations of funds to Tier I or Tier II regions 2009a, pp. 16, 17). With FY '10 TSGP funding distributions totaling $253 million (USDHS, 2010, p. 7). This could have represented a substantial difference in funding for mass transit agencies. The GAO found that a cost effective method for incorporating vulnerability information should be incorporated into future iterations of the TSGP risk model (GAO, 2009a, pp. 16, 17). In response, the TSA indicated it would consider looking at past vulnerability assessments and its BASE reviews for vulnerability information (GAO, 2009a, p. 17).

Congress requested the NRC of the National Academies to review the DHS' approach to risk analysis to assess its capabilities to inform decision-making (NRC, 2010, p. 1). The results of the review indicate that the DHS' risk assessment methodology has been flawed, and until practices are improved, only low confidence should be placed in its risk analysis in relation to terrorism (NRC, 2010, p. 11). Nor does the DHS appear to be on a path for development of its risk assessment methods and capability (NRC, 2010, p. 11). The NRC noted that defining the threat and estimating probabilities are inherently challenging because of the lack of experience with such events; the associated absence of data on which to base reliable estimates of probabilities; and the effect of an intelligent adversary that may seek to defeat preparedness and coping measures (NRC, 2010, p. 4). The NRC then recommended that the DHS consider the adaptability of intelligent

adversaries, consistently include evaluation of non-physical vulnerabilities, characterize sources of uncertainty, working toward verification of validation models, improving documentation, and by submitting models and analyses to external peer review (NRC, 2010, p. 5). Lastly, the NRC recommended that TSA/FEMA, become explicit about using population density as the primary determinant for grant allocations (NRC, 2010, p. 6).

Notwithstanding the fact that more than a billion dollars of TSGP funds have been distributed based on a faulty risk model and Congress has placed significant limitations on the percentage of TSGP funds that can be expended for operations, Tier I and Tier II chiefs are in agreement that more of the funds need to be invested in human security than are currently allocated. Tier I and Tier II chiefs are concerned over the security of Tier II mass transit agencies and Tier II chiefs believe distribution of funds between Tier I and Tier II is out of balance. Tier I and Tier II chiefs are in agreement that more funds should be invested in LEOs because the visible and unpredictable nature of the security, which they provide, is the single best tool to address the threat of terrorism. It was suggested that with current economic conditions mass transit agencies could not afford to hire LEOs. Therefore, the TSA needs to convey this message to Congress and should develop its own COPS style grant program for mass transit on the order of the COPS grant program administered by the DOJ.

Recognizing that the TSGP's priority is infrastructure security improvements, the data indicates that it may be time to revisit the TSGP's priorities with a view toward increasing the emphasis on human elements of security. This is particularly critical at this time considering that the *9/11 Commission Act* requires the funding percentage that can be applied to operational costs such as LEOs be reduced in FY '11 from 20 percent to 10 percent (IRCA, 2007). Furthermore, in light of the changing threat environment and the problems that have been identified with the DHS risk assessment model, it may also be time to revisit whether the allocation between Tier I and Tier II regions is appropriate. Lastly, an element of TSA's other major security programs like the BASE

review of the STSIP can have an impact on the TSGP. Enabling the TSIs to contribute to effective vulnerability studies and threat assessments would improve both the STSIP and the TSGP.

IV. THE NATIONAL EXPLOSIVES DETECTION CANINE TEAM PROGRAM

A. INTRODUCTION

This chapter is divided into 12 sections. Section A is the Introduction. Section B is intended to expose the reader to the effectiveness of explosives detection canine teams as well as to provide background on the origins of the national program, including an overview of the administration of the program and its training requirements. The requirements placed on the DHS-TSA for the National Explosives Detection Canine Team Program (NEDCTP) under the Implementing Recommendations of the *9/11 Commission Act* of 2007 are explained in section C. Section D identifies challenges facing the program identified in the DHS OIG's June 2008 report including feedback on the program from stakeholders. A summary of the GAO's July 31, 2008 report to the Congress on the program pursuant to the *9/11 Commission Act*, including the significant challenges facing the program are set forth in section E. Section F provides an account of other DHS component agencies that manage their own explosives detection canine team programs EDCTPs. The current status of the program from DHS' 2010 *Bottom-Up Report* is detailed in section G. Section H is interviewing data of Chiefs of Police of Tier I mass transit agencies. Policy implications attributable to interviews of Tier I chiefs is described in section I. Section J is interviewing data of Chiefs of police of Tier II mass transit agencies. Policy implications attributable to interviews of Tier II chiefs are described in Section K. Section L is a chapter summary, discussion and conclusions.

B. BACKGROUND

On July 22, 2008, John C. Pearce, Associate Director of Training and Operations, Canine and Detection Research Institute, Auburn University, testified before the U.S. House of Representatives, Committee on Homeland Security, Subcommittee on Management, Investigations and Oversight. Pearce testified that a well trained canine

detection team is the most capable, readily available, and least expensive tool for the detection of explosives—the "gold standard" by which all other detection technology is judged (Pearce, 2008, pp. 1, 9).

Canine detection teams are so effective that the United States Marine Corps (USMC) increased its number of explosives detection canines in Afghanistan from 300 to 647 (Vanden Brook, 2010, p. 1). The EDCTs were necessary to counter the improvised explosives devices (IEDs) planted by insurgents, which during August 2010 numbered 1,292. In September 2010, the Pentagon planned to pay up to $34 million to a Virginia firm for supplying 400 Labrador Retrievers for consideration by trainers; 200 of the canines were to be bought, and 100 of those deemed suitable for training (Vanden Brook, 2010, p. 1).

On March 9, 1972, a bomb-sniffing dog located an explosive device, just 12 minutes before it was timed to explode, on an aircraft destined for Los Angeles from New York City. This incident led to the creation of the NEDCTP in 1973. The program was initiated under the direction of the Federal Aviation Administration (FAA) starting with 40 canine teams at 20 airports (Transportation Security Administration [TSA], 2010). By 1997, the NEDCTP had grown to 87 Explosives Detection Canine Teams (EDCTs) at 27 airports (TSA, 2010).

From 1997 until 2005, there was little involvement between the NEDCTP and mass transit. David Kontny, the Director of TSA's NEDCTP, testified before the U.S. House of Representatives Subcommittee on Management, Integration, and Oversight Committee on Homeland Security on September 28, 2005. He explained that the purpose of TSA's NEDCTP is to deter and detect the introduction of explosives devices into the transportation system (HR, 2005, p. 1). He then described the program in detail. Each NEDCTP canine team is composed of one dog provided by the TSA and one handler employed by the local law enforcement or transportation authority that enters into a voluntary agreement with the NEDCTP (HR, 2005, p. 1). Under the agreement, the local agency agrees to utilize TSA-certified canine teams at least 80 percent of the time in the transportation environment (HR, 2005, p. 1). The local agency agrees to participate in the program for five years and to maintain a minimum of three TSA-certified canine

teams for incident response for a minimum of three years for each team (HR, 2005, p. 2). The TSA provides the dog, training of the handler, explosives training aids, and technical assistance at no cost to the participating agency (HR, 2005, p. 2). In addition, monetary reimbursement was provided to the local jurisdiction, in the amount of $40,000 per canine team per year to help defray costs such as kennel facilities, transport vehicles, and veterinary care (HR, 2005, p. 2).

Initial training for handlers and canines consists of a 10-week course conducted at the TSA's Explosives Detection Canine Handler Course at the Department of Defense (DoD) Military Working Dog School at Lackland Air Force Base in San Antonio, Texas (HR, 2005, pp. 2, 3). During the initial training, the handler develops canine handler skills and learns about explosives handling, safety and transportation requirements, explosives contamination issues within the operating environment, and administrative requirements (HR, 2005, pp. 2, 3).

After graduation from the initial training course, the team receives a preliminary certification for its assigned duty location (HR, 2005, p. 3). Each newly deployed canine team is then required to complete a 14-day training mission in its home base operating environment before achieving full certification (HR, 2005, p. 3).The training attempts to characterize real threats, and is "objective based"—meaning that a training objective must be met that enhances the team's capabilities or is used to correct a discrepancy noted during a previous evaluation or training scenario (HR, 2005, p. 3). The training results are reported to TSA headquarters where they are reviewed for compliance via the TSA Canine Web-site (CWS) (HR, 2005, p. 2). Each EDCT must also undergo an intensive annual certification process designed to evaluate the team's ability to perform its daily mission (HR, 2005, p. 3). The TSA's instructors from Texas on site in an operational environment over several days conduct these certifications (HR, 2005, p. 3).

The TSA has partnered with the Federal Bureau of Investigation and National Institute of Justice to sponsor the Scientific Working Group on Dog and Orthogonal Detection Guidelines (SWGDOG) to enhance the performance of the EDCTs (HR, 2005, p. 5). The SWGDOG was established in January 2005 in an effort to develop consensus-based guidelines that can be shared across all groups involved in canine detection work

(FBI, 2010). The SWGDOG is managed through Florida International University and membership includes representatives from six international, 10 federal, 15 state, and local, and eight private canine detection organizations (FBI, 2010). These guidelines include initial training, canine/handler team certification, maintenance training, proficiency assessment, and documentation (FBI, 2010).

According to Kontny, as of September 28, 2005, TSA had deployed 345 EDCTs at 66 airports, but at only one mass transit system, the Metropolitan Atlanta Rapid Transit Authority (MARTA) in Atlanta, Georgia (HR, 2005, p. 1). Of the $22 million appropriated for FY ’05 for the NEDCTP, two million dollars was dedicated for expanding the program into mass transit (HR, 2005, p. 3). TSA’s immediate goal at that time was to provide 10 mass transit systems with 3 EDCTs each. The 10 mass transit systems were selected on the basis of passenger ridership, critical infrastructure, threats, and other security criteria. In a press release issued by the TSA on September 28, 2005, the 10 mass transit and commuter rail systems were identified as follows (TSA, 2005):

- Massachusetts Bay Transportation Authority (MBTA)
- San Francisco Bay Area Rapid Transit District (BART)
- Southeastern Pennsylvania Transportation Authority (SEPTA)
- Washington Metropolitan Area Transit Authority (WMATA)
- Port Authority Trans-Hudson Corporation (PATH)
- Chicago Transit Authority (CTA)
- Los Angeles County Metropolitan Transportation Authority (Metro)
- Maryland Transit Administration (MTA)
- San Francisco Municipal Railway (Muni)
- San Diego Trolley, Inc. (SDTI) (TSA, 2005).

To enhance the program, the TSA adopted a three-prong approach to canine procurement to ensure an adequate number of canines are available for the NEDCTP. This three-prong approach included partnering with the DOD, which has a larger explosives detection canine program than the TSA, using U.S. canine vendors, and establishing the TSA’s Puppy Program, modeled after the Australian Customs Service National Breeding Program (HR, 2005, p. 2). TSA’s Puppy Program was started in 1999

with six adult female canines and two adult males provided by the Australian Customs Service. The first breeding occurred in January 2002, and the program has produced over 500 puppies (TSA, 2010).

C. IMPLEMENTING THE RECOMMENDATIONS OF THE 9/11 COMMISSION ACT OF 2007

The 9/11 Commission seems to have recognized the value of EDCTs in protecting mass transit from the threat of improvised explosive devices. Public Law 110-53, enacted on August 3, 2007, also known as Implementing Recommendations of the *9/11 Commission Act* of 2007, placed several requirements on the DHS Secretary, TSA Administrator, and the NEDCTP (IRCA, 2007). These requirements, listed below, included an increase in the NEDCTs capacity within 180 days after passage of the Act (IRCA, 2007):

1. Begin to increase the number of explosives detection canine teams certified by the TSA for the purposes of transportation-related security by up to 200 canine teams annually by the end of 2010.
2. Encourage state, local, and tribal governments and private owners of high-risk transportation facilities to strengthen security through the use of highly trained explosives detection canine teams.
3. Use the TSA's NEDCT Training Center, including expanding and upgrading existing facilities, procurement and breeding of additional canines, and increased staffing and oversight commensurate with the increased training and deployment capabilities.
4. Partner with other federal, state, or local agencies, nonprofit organizations, universities, or the private sector to increase the training capacity for canine detection teams.
5. Procure explosives detection canines trained by nonprofit organizations, universities, or the private sector provided they are trained in a manner consistent with certain standards and requirements or other criteria developed by the Secretary.
6. A combination of the above, as appropriate (IRCA, 2007).

The Act also required the TSA to establish standards for EDCTs across the nation's transportation network (IRCA, 2007). The Act further required the DHS Secretary through the TSA Administrator to ensure the EDCTs are procured as efficiently

as possible, and at the best price, while maintaining the necessary level of quality, including, if appropriate, increased domestic breeding (IRCA, 2007). Funding authorization was to be appropriated to the Secretary as necessary to carry out this requirement for fiscal years 2007 through 2011 (IRCA, 2007). Not later than one year after the enactment of the Act, the Comptroller General was required to report to the appropriate congressional committees on progress toward strengthening the security and the capacity of the NEDCTP (IRCA, 2007, Sec. 1307, [A–D])

D. DHS' JUNE 2008 OFFICE OF INSPECTOR GENERAL'S (OIG) REPORT

The DHS OIG reviewed TSA's NEDCTP and identified challenges facing the NEDCTP in its June 2008 report entitled *TSA's Administration and Coordination of Mass Transit Security Programs*. The report noted that stakeholders consider the TSA's training program to be excellent, but the requirement to send officers to a 10-week training course in Texas was found to be burdensome (OIG, 2008, pp. 31–32). The need to pay overtime to backfill for the officer who attended training created a financial liability for the transit agency (OIG, 2008, pp. 31–32). Canine handlers who were already experienced were required to attend the full 10 weeks of training, even though they already possessed many of the skills being taught (OIG, 2008, pp. 31–32). The most qualified officers selected as handler candidates were not always willing to leave their families for such an extended period (OIG, 2008, pp. 31–32). Lastly, small transit agencies without existing canine programs faced extensive start-up costs, which could exceed the TSA stipend (OIG, 2008, pp. 31–32). These start-up costs include spending money on first kennels, canine-ready vehicles, and secure containers for storing explosive training materials (OIG, 2008, pp. 31–32). The OIG report recommended that TSA provide additional start-up grant funds for agencies without existing canine explosive detection units (OIG, 2008, p. 18).

The OIG report further noted that the *9/11 Commission Act* states that the TSA should develop a certification program for non-TSA explosive dogs and encourages TSA to explore ways to expand its canine detection units OIG, 2008, pp. 31–32). Any

measures TSA can take to make this program more widely available would contribute to mass transit rail security (DHS, OIG, 2008, pp. 31–32).

E. GAO'S JULY 2008 REPORT PURSUANT TO THE 9/11 COMMISSION ACT OF 2007

On July 31, 2008, the GAO, pursuant to its responsibilities under the Implementing Recommendations of the *9/11 Commission Act* of 2007, issued a report entitled *TSA's Explosives Detection Canine Program: Status of Increasing the Number of Canine Teams, Briefing for Congressional Committees*. The GAO reported that the TSA planned to train, deploy, and certify up to 200 EDCTs annually over the next three years, consistent with the requirements of the act (GAO, 2008). GAO also opined that the Act provided the TSA with the flexibility to determine the number of additional EDCTs it will deploy, within limits, to satisfy the requirements of the *9/11 Commission Act* (GAO, 2008

The TSA was appropriated funding under the *Iraq Supplemental Act* of 2007 for no fewer than 170 additional EDCTs to secure air cargo against explosives (GAO, 2008). The TSA considered meeting the requirements under this act as satisfying its obligation for achieving up to 200 teams for 2008 under the *9/11 Commission Act* (GAO, 2008, pp.17, 18). As of June 9, 2008, 430 EDCTs were deployed through the NEDCTP, including 370 EDCTs at 69 airports, and 56 EDCTs at 14 mass transit agencies (GAO, 2008). TSA planned to have a total of 627 EDCTs deployed by the end of fiscal year 2008 (GAO, 2008, p. 13). For 2008, a total of $3.5 million was allocated to support 45 additional NEDCTs for mass transit (GAO, 2008, pp. 10, 20)

The July 31, 2008 GAO report identified a number of challenges facing the TSA's NECDTP, including the achievement of the requisite number of canines capable of meeting the standards of the program (GAO, 2008). The report noted that the TSA was facing a challenge in trying to obtain sufficient numbers of canines from its own Canine Breeding and Development Center as well as from the DoD and from a private kennel (GAO, 2008). Since 2002, the center had provided only 36 canines that had been deployed in the NEDCTP (GAO, 2008). Other challenges to the NEDCTP included

hiring additional instructors, noting that they perform a dual role of conducting training, as well as traveling to locations where teams are deployed to conduct certifications (GAO, 2008). Another challenge was adjusting the training schedule to increase the number of classes without reducing the quality of the training program (GAO, 2008). Also noted was the need to manage an outreach program to secure additional canine handlers (GAO, 2008).

F. OTHER DHS COMPONENT AGENCY'S CANINE TEAM PROGRAMS

Besides the TSA, DHS's other component agencies independently manage their own EDCTPs as follows:

1. The U.S. Customs and Border Protection (CBP)

The U.S Customs and Border Protection (CBP) Office of Field Operations Canine Enforcement Program's initial explosives detection canine teams were trained in 2002. The program's mission is to prevent terrorists and their weapons from entering the United States and to assist other law enforcement agencies GAO, 2008). The CBP's Office of Field Operations has several dozen explosives detection canine teams that are deployed to numerous ports of entries throughout the United States (GAO, 2008, p. 39).

The CBP EDCTs conduct screening for explosives on tractors, trailers, rail, ferries, and passenger cruise ships, at airports on aircraft and in air cargo, on passengers, and in luggage and in occupied buildings (GAO, 2008). CBP handlers must have a minimum of three years experience with the agency (GAO, 2008). The CBP uses internally developed standards to train EDCTs at CBP's canine training center in Front Royal, Virginia. CBP's EDCTs undergo re-certification evaluations every six months (GAO, 2008). The CBP has its own canine breeding program on-site at its training center, and procures canines from private vendors (GAO, 2008, p. 40).

2. U.S. Coast Guard (U.S.C.G)

In an example of inter-agency cooperation, the CBP trains and certifies U.S. Coast Guard teams and procures canines for U.S. Coast Guard teams (GAO, 2008, p. 40).

The USCG's EDCTs were first fielded in 2003, pursuant to the implementation of the *Maritime Transportation Security Act* of 2002, to detect explosive substances in support of homeland security and law enforcement (GAO, 2008). The USCG considers the number and specific locations of its EDCTs to be sensitive information, but generally they are deployed to several ports around the nation (GAO, 2008). The EDCTs conduct searches at port facilities and onboard vessels entering port. USCG's EDCTs participate in interagency partnerships, provide assistance to state and local law enforcement agencies, and provide immediate response to interagency needs through Adaptive Force Packages (combinations of discrete operational capabilities designed to meet discrete mission requirements) (GAO, 2008, p. 41).

3. U.S. Secret Service (USSS)

The U.S. Secret Service (USSS) established a canine unit in 1976 to provide a safe and secure environment for individuals and locations protected by the USSS (GAO, 2008). The USSS EDCTs are based in Washington, D.C. and are deployed to other locations as needed (GAO, 2008). The USSS personnel train EDCTs at the agency's training facility in Maryland using internally developed training standards (GAO, 2008). The USSS procures its canines from a private kennel (GAO, 2008, pp. 42, 43).

4. Federal Protective Service (FPS)

The Federal Protective Service (FPS) established its canine program in 2003 to provide explosives detection capability for the protection of life and property and to provide a strong visible and psychological deterrence against criminal and terrorist acts (GAO, 2008). Over 50 canine teams are deployed nationwide with teams in each FPS region (GAO, 2008). The FPS considers the specific number and deployment locations to be sensitive information (GAO, 2008). EDCTs are responsible for conducting routine explosives searches of office areas, vehicles, materials, packages, and persons housed in federally owned or leased facilities, and responding to bomb threats and unattended packages (GAO, 2008). The FPS canines were procured and trained in partnership with a

public university's canine training center, and as of the date of the GAO report, the FPS was examining options for future training providers (GAO, 2008, p. 44).

G. DHS' BOTTOM-UP REVIEW REPORT OF JULY 2010

DHS reported in its July 2010 *Bottom- Up Review Report*, that TSA, as of that date, had a total of 705 EDCTs deployed across the country (DHS, 2010). Of this number, 165 were proprietary, meaning that TSA employees handled the canines, typically to secure air cargo against explosives (DHS, 2010). The remaining 640 were agreements with police agencies including both airports and mass transit agencies (DHS, 2010). The specific number deployed for mass transit was not reported (DHS, 2010, pp. A-1, B-1). The DHS *Report* also noted that in February 2010 the department published the nation's first comprehensive review of America's strategy for homeland security, the *Quadrennial Homeland Security Review* (QHSR) (DHS, 2010). The QHSR suggested that DHS take the initiative of establishing itself as a center of excellence for canine training and deployment (DHS, 2010). As a result, according to the report, DHS has taken on the mission of increasing specialized breeding activities for canines, and enhancing its training and certification of canines across the homeland security missions (DHS, 2010, p. 8).

H. INTERVIEWS OF CHIEFS OF POLICE FROM TIER I MASS TRANSIT AGENCIES

In order to conceptualize the issues associated with this apparent lack of progress in mass transit, Chiefs of Police from Tier I and Tier II mass transit agencies were selected for interview for their first hand subject matter knowledge. These security professionals provided information and expert opinion that expanded upon what was available from open source materials. The interviews provided context to the U.S. government reports and open source data, and helped to shape the policy options presented in a later section of the thesis.

The three Chiefs of Police of Tier I transit agencies were asked the following questions during their interviews:

> Please describe how your mass transit agency applies the TSA's National Explosives Detection Canine Team Program (NEDCTP) to your agency's Security efforts. What is good about the program, and how can it be improved? What recommendations can you make to Tier II mass transit agencies concerning this program? Follow up questions were asked as appropriate for clarification or expansion of the Chief's response. Responses were grouped into five broad categories, Application of the program to their own agencies; positive aspects of the program; recommendations for Tier II agencies; recommendations for overall program improvement; program criticisms; and non-NEDCTP initiatives.

First, on the broad question of how the agency applies the program to its own security efforts, the Tier I Chiefs of Police reported 100 percent participation in the program. Two of the chiefs reported that both of their agencies utilized five NEDCTs. The other chief reported that his agency utilized six NEDCTs. The EDCTs are directed to support high visibility patrols, to support VIPR operations, and passenger screening in the agencies that conduct those types of operations. Having a robust number of EDCTs enables mass transit agencies to quickly assess suspicious packages, thereby reducing the number and length in delays of service, while resolving whether the suspicious items present a real threat.

Concerning the positive aspects of the program, each of the chiefs expressed general satisfaction with the NEDCTP. The financial benefits of the program were primary motivating factors for their participation in the program. The NEDCTP has enhanced the agency's explosives detection capabilities without the department incurring the financial costs associated with expanding its own programs. Each of the Tier I chiefs advised that when their non-EDCTP canines were removed from service NEDCTP canines have replaced them. The burden is lessened by sending officers for training one at a time rather than in groups of three at a time. The TSA stipend pays for program expenses, and the remaining funds are applied to the officer's salary. The non-EDCTP assets are much more expensive to the agency because all of those costs are absorbed by the agency, including procurement of the canine, training, veterinary needs, food, and kenneling. A concern was also expressed that at some point the TSA may eliminate its stipend of $40,000 to $50,000 (GAO, 2008) per team per year and the sustainability of the EDCTs will become problematic for the agencies.

As far as recommendations for Tier II mass transit agencies, the chiefs were agreed that EDCTs improve an agency's capabilities to detect explosives. Concern was expressed over the "homegrown terrorist threat." A Tier I chief noted that the majority of mass transit agencies in the nation are bus agencies. There are many such agencies that feed into his system and are thereby linked to his system. He said that terrorists will look for the weakest links in the mass transit network to infiltrate and launch their attack. Consequently, Tier II agencies need to be well protected, like Tier I agencies. The chief would divert more TSA resources to Tier II agencies knowing that it will make all mass transit agencies better protected. He said that when assets are shared across jurisdictions, the entire community benefits.

The Tier I chiefs had other recommendations for improvement of the program on the whole. One chief noted that the transit agency does not now but should have a say in the type of breed of canine that is assigned by the TSA to the transit agency. All of the non-NEDCTP canines selected by his agency have been Labrador retrievers due to their friendly disposition, which the chief views as important for the transit environment; however, NEDCTP canines include German shepherds and Belgian Malanois, which are more "high-strung" than Labrador retrievers. TSA's trainers are often former military officers and experienced in training for the aviation side of the house. These trainers are not only less familiar with all of the unique needs in the mass transit environment; they are also less open minded about these concerns. In the chief's view, each of the breeds used by the TSA detects explosives as well as the other, except that the Labrador retrievers have a better disposition. The chief advised that appearances are also important; the German shepherd breed can represent a less friendly/more intimidating presence to his passengers.

Several criticisms of the program were made. One Tier I chief advised that his agency requested that the TSA fund an additional three teams for his agency; however, the TSA was unable to accommodate the request. Therefore, his agency must maintain a cadre of non-NEDCTP teams. The Tier I chief also noted that it could take up to two

months for TSA instructors to visit the agency after graduation from the Texas based training center. This is too long a period to wait for certification of the teams in the transit agency's operating environment.

Lastly, the Tier I chiefs provided information on their non-NEDCTP resources, which was particularly helpful in drafting the policy options analysis chapter of this study. Each of the chief's agencies had EDCTs at their agencies before the NEDCTP expanded into mass transit. One agency's program has been in place since 1991 and another since 1997. One agency presently has six non-NEDCTs, and another has five. A third agency has four. The FY 2005 TSGP and other agency funds funded the non-NEDCTs. Canines were procured from local breeders or acquired as donation canines. One agency trains all of the non-NEDCTP canines to TSA standard, which is becoming the industry standard. Certified trainers performed training for his non-EDCTP assets. The handlers were already trained bomb technicians. The agency's non-EDCTP canines are certified by and meet International Police Working Dog Association standards and were previously certified and met North American Police Working Dog Association (NAPWDA) standards. The non-NEDCTP dogs have been trained in the mass transit environment and all are high performers. One Tier I agency has a TSA certified trainer on his staff who is also a canine handler and each of the department's non-NEDCTP assets are trained and certified up to TSA and national association standards by this trainer. Training is done on-site for the agency's EDCTs and other neighboring EDCTs. The on-site training itself serves as a visible deterrent.

I. POLICY IMPLICATIONS ATTRIBUTABLE TO INTERVIEWS OF TIER I CHIEFS OF POLICE

1. Implications for Increasing EDCTs

The policy implications associated with increasing the number of EDCTs are evident from the interview data. First, the financial benefits of the NEDCTP to the Tier I mass transit agencies are of primary importance. Without the financial support of the NEDCTP, even Tier I mass transit agencies that are more likely to have more resources

than Tier II mass transit agencies are unable to supply themselves with the requisite number of EDCTs to address their security needs.

Second, the NEDCTP is unable to adequately address the security needs of Tier I mass transit agencies, and thus unlikely able to address the security needs of the lower priority Tier II mass transit agencies.

Third, even in agencies where the NEDCTP was unable to supply Tier I mass transit agencies with the requisite number of EDCTs to support their security needs, Tier I agencies had developed EDCTs independent of the NEDCTP. In fact, Tier I mass transit agencies had procured 14 EDCTs by procuring and training canines on their own, to nationally recognized standards. Tier I chiefs also expressed a desire to have more control over the breed selected for use on mass transit. They would have this control if they procured the canines themselves rather than sending their officers to the TSA training facility in Texas where they would receive whatever breed of canine the TSA chose to give them. These factors lend support the concept that mass transit agencies are capable of procuring and training EDCTs, if they have the financial means to do so.

The policy implications associated with increasing resources generally for Tier II mass transit agencies were also made clear with the recognition that Tier II mass transit agencies are typically bus agencies, which feed into larger Tier I systems. It was noted that terrorists may infiltrate the mass transit network to launch their attack through Tier II systems if they do not receive protection like Tier I agencies, especially with the development of the "homegrown" terrorism threat.

J. INTERVIEWS OF CHIEFS OF POLICE FROM TIER II MASS TRANSIT AGENCIES

Of the seven Chiefs of Police of Tier II transit agencies who were interviewed, all were asked the following question:

> Please describe how your mass transit agency applies the TSA's National Explosives Detection Canine Team Program (NEDCTP) to your agency's Security efforts. What is good about the program, and how can it be improved? Follow up questions were asked as appropriate for clarification or expansion of the Chief's response. Responses were grouped into five

broad categories, Application of the program to their own agencies; positive aspects of the program; recommendations for overall program improvement; program criticisms; and non-NEDCTP initiatives.

First, on the broad question of how the agency applies the program to its own security efforts, of the seven Chiefs of Police of Tier II transit agencies who were interviewed, not a single one reported participation by their agency in the NEDCTP. Therefore, none could report on the positive aspects of the program from a first hand perspective. Yet, each of the Chiefs of Police reported that they would have preferred their agency's participation in the program. A common thread reported for lack of participation in the program was a shortage of manpower. One chief advised that he did not have enough police officers to dedicate three officers as canine handlers. TSA's program requires that participating agencies establish at least three teams. Two chiefs advised that they would be unable to dedicate three police officers as canine handlers all at one time. They would all be willing to participate in the program if they were able to dedicate one officer at a time over a more extended period. A chief expressed his view that a transit agency can get no better high visibility protection than the EDCTs. He did not believe his department should be penalized just because he was trying to build his EDCT capabilities one EDCT at a time. One chief's department had been reduced by 15 percent over the past five years for economic reasons, and another chief's department was reduced by 11 percent in the past 18 months. Finally, one chief was denied participation in the program by the TSA because his police department was too small.

The Tier II chiefs had recommendations for improvement of the program. Two of the Tier II chiefs advised that borrowing the TSA's EDCTs from the airports to patrol their mass transit agency is not the solution to their needs. Canines that are trained in a closed and somewhat sanitized airport environment are not conditioned to operate in a mass transit environment, and therefore are not as effective as those trained exclusively on mass transit. Furthermore, if threat levels increased, the TSA would need the EDCTs reassigned to the airport to address its own elevated threat conditions; consequently, the EDCTs would no longer be available for his mass transit agency. It was suggested that the TSA do a better job of informing mass transit executives on the value of EDCTs; the

program must be made more palatable to them in order for them to dedicate scarce officer resources to the program. If the federal government made it easier for mass transit agencies to qualify for the NEDCTP, then it would be sending a signal that the program is important, hence making it easier to justify to executive management.

Several criticisms of the program were made. In some cases, lack of information sharing by the TSA was noted. One Tier II chief said that he was unaware that the TSA had an EDCTP until after he had procured his first canine. Further, no representative of the TSA has ever discussed the program with him, or offered it to him. Another chief advised that he had only learned of the NEDCTP last year. A third chief had erroneous information about the NEDCTP; he thought that if he participated in the NEDCTP, he was required to agree to send his team anywhere at any time in response to a TSA request. This chief decided if such a requirement existed, he would not participate in the program because he would run the risk of having his team reassigned when he may need it the most. The chief's misunderstanding was that sending the teams off to provide assistance elsewhere was not a mandatory program requirement.

Lastly, the Tier II chiefs provided information on their non-NEDCTP resources, which, just as with the Tier I chiefs, was helpful in drafting the policy options analysis chapter of this study. The chiefs provided details of how they achieved success in addressing the threat of explosives without participation in the NEDCTP. Four of the Tier II chiefs reported that their agencies acquired EDCTs independently of the NEDCTP. Two of the chiefs had procured three canines each; two other chiefs had procured one canine each; and all of them were procured and trained locally. Two of the canines, including their training and related equipment, were procured with funding from the fiscal year 2005 Transit Security Grant Program. In all, six of the canine teams were certified. The North American Police Working Dog Association (NAPWDA) provided three certifications. Three others were associated with a Bureau of Alcohol Tobacco Firearms and Explosives agency program and certified by that agency and the United States Police Canine Association (USPCA). One of the chiefs planned to increase his EDCTs on his own over time independently of the NEDCTP.

K. POLICY IMPLICATIONS ATTRIBUTABLE TO INTERVIEWS OF TIER II CHIEFS OF POLICE

1. Implications for Increasing EDCTs

The policy implications associated with the need for increasing the number of EDCTs are evident from the interview data. First, there is a clear lack of NEDCT resources for Tier II mass transit agencies since all Tier II mass transit agencies reported no participation in the program.

Second, Tier II agencies had developed EDCTs in spite of the lack of support from the NEDCTP. In fact, Tier II mass transit agencies had procured eight EDCTs by procuring and training canines on their own to nationally recognized standards. These factors support the fact that Tier II mass transit agencies are also capable of procuring and training EDCTs without sending officers to the TSA's Texas facility for training, if they have the financial means to do so.

2 Implications for Increasing LEOs

Policy implications associated with the need for increasing the number of LEOs are also evident from the interview data. Significantly, the common thread among Tier II mass transit chiefs was their lack of LEOs to send to Texas for training, especially in groups of three as required by the NEDCTP. One chief reported a decline in LEOs at his agency by 15 percent and another by 11 percent due to declining economic conditions.

L. CHAPTER SUMMARY, DISCUSSION AND CONCLUSIONS

EDCTs were created in response to bomb threats in the aviation sector in the 1970s and introduced to mass transit in 2005 (TSA, 2010). They are widely considered to be the best tool for the detection of explosives, as evidenced by the fact that in 2010 the Pentagon set aside $34 million for the procurement of canines for this purpose (Vanden Brook, 2010, p. 1). As of September 2005, the TSA had developed 345 EDCTs for airports but only one for mass transit (HR, 2005, p.1). In 2005, $22 million was appropriated for the NEDCTP but only two million dollars for mass transit (HR, 2005, p.

3). The goal by the end of 2005 was to have three EDCTs for each of 10 mass transit agencies selected on the basis of ridership. The *9/11 Commission Act* of 2007 strongly encouraged the development of EDCTs, and funding authorization was to be appropriated to the Secretary as necessary to expand the NEDCTP by up to 200 canines per year by the end of FY 2010 (IRCA, 2007). The act encouraged a variety of methods to expand the program including: expanding the national center; partnering with federal, state, and local agencies, not for profits, universities, and the private sector; a combination of these resources; and the development of national standards.(IRCA, 2007). When the DHS OIG reviewed the NEDCTP, it found that mass transit agencies considered the 10 weeks of training in Texas to be a burden on their department (OIG, 2008, pp. 31, 32). Overtime for the backfill for the officers sent to the training was also burdensome (OIG, 2008, pp. 31, 32). The travel itself was hard on the officers, and start up costs of the program was burdensome on the departments (OIG, 2008, pp. 31, 32). By June of 2008, the number of EDCTs for mass transit had grown to 56 EDCTs at only 14 mass transit agencies GAO, 2008) Another $3.5 million was allocated for EDCTs for mass transit to add an additional 45 EDCTs (GAO, 2008, pp. 10, 20). The current number of EDCT's for mass transit that are part of the NEDCTP is estimated at between 100 and 120. Using the larger number of 120, this means that if the EDCTs were equally distributed among the nation's 60 largest mass transit agencies, each agency would have only two EDCTs distributed among them.

Three Tier I mass transit agency chiefs who were interviewed reported that they had 16 NEDCTs among them, an average of about five per mass transit agency. Seven Tier II mass transit agency chiefs reported having none. This is woefully inadequate for mass transit systems that cover vast areas and that operate on a 24 hour a day, seven day a week basis.

Both Tier I and Tier II mass transit agencies recognize the need for EDCTs with or without support of the NEDCTP. Separate from the national program, Tier I mass transit agencies had procured 14 EDCTs by buying and training canines on their own and training them to nationally recognized standards. Tier II mass transit agencies had procured and trained eight EDCTs that were not part of the national program. Six of the

EDCTs met national certification standards. This suggests that mass transit agencies are capable of procuring and training EDCTs on their own, and training those to national standards if they have the resources to do so.

Other concerns included a desire to have more control over the breed selected for use on mass transit, and with the development of the "homegrown" terrorism threat, whether Tier II mass transit agencies were adequately secured. Borrowing EDCTs from airport assignments was recognized as no solution to their needs. An untapped resource that could potentially contribute to the solution of this problem is the four DHS component agencies that develop EDCTs for their agencies. Significantly, and consistent with the DHS OIG findings, the common thread among Tier II mass transit chiefs was their lack of LEOs to send to Texas for training, especially in groups of three as required by the NEDCTP. One chief reported a decline in LEOs at his agency by 15 percent and another by 11 percent due to declining economic conditions.

EDCTs have been described as the "gold standard" for the detection of explosives on mass transit (Pearce, 2008, p. 9). However, the competing requirements from all transportation sectors has resulted in significantly less EDCTs for mass transit than is required to adequately provide for their terrorism security needs, considering the size and scope of the mass transit industry. Besides the fact that the NEDCTP is not producing EDCTs in sufficient numbers to supply mass transit agencies with what they need, the program has other administrative obstacles that stand in the way. The program is burdensome on mass transit agencies with the requirement that agencies must send officers in teams of three to attend 10 weeks of training in Texas (OIG, 2008, pp. 31, 32). Mass transit agencies have difficulty in fulfilling this requirement. In addition, backfilling for the officers is problematic. Then, when the officers return from training, certification of the teams in the local environment by TSA personnel is delayed due to a lack of resources to perform the certification. The *9/11 Commission Act* apparently recognized the limitations of the NEDCTP and encouraged the TSA to partner with the private sector to increase the training capacity for EDCTs. The options now available to Tier I and Tier II mass transit agencies to increase EDCTs are insufficient, and the need for both increased EDCTs and increased LEOs is apparent from this data.

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V. THE SURFACE TRANSPORTATION SECURITY INPECTION PROGRAM

A. INTRODUCTION

This chapter is divided into 10 sections. Section A is the Introduction. Section B is intended to provide the reader with an explanation of the origins and evolving mission of the program; the three principal functions within the program for mass transit; and composition of the program. The requirements placed on the DHS-TSA for the STSIP under the Implementing Recommendations of the 9/11 Commission Act of 2007 are explained in section C. Section D describes the DHS OIG's June 2008 findings on the program. The DHS OIG's report to the Congress on the program pursuant to the 9/11 Commission Act, with specific recommendations is described in section E. Section F is interviewing data of chiefs of police of Tier I mass transit agencies. Policy implications attributable to interviews of Tier I chiefs are provided in section G. Section H is interviewing data of chiefs of police of Tier II mass transit agencies. Policy implications attributable to interviews of Tier II chiefs are provided in section I. Section J is a chapter summary, discussion, and conclusions.

B. BACKGROUND

The STSIP finds its origin in the *DHS Appropriations Act of* 2005 that called for the deployment of up to100 federal rail compliance inspectors (OIG, 2009, p. 3). These inspectors have evolved to what are now known as Surface Transportation Security Inspectors (TSIs). In April 2005, the TSIs primary mission was monitoring stakeholders compliance with TSA's May 20, 2004 Security Directives (OIG, 2008, p. 9). The TSA ultimately withdrew plans to enforce the directives through compliance inspections because stakeholders complained over not being consulted, and considered the directives to be overly broad, costly, and in contradiction of the DOT's safety standards (OIG, 2008, p. 9). Since then, in mass transit, the TSA has pursued a strategy that emphasizes collaboration with stakeholders on security enhancements rather than compliance

inspections (OIG, 2008, p. 9). Presently, in mass transit, TSIs have three principal responsibilities, performing base assessments, increasing domain awareness, and participating in VIPR operations (OIG, 2009, p. 2).

Performing base assessments for Security Enhancement (BASE) reviews is the TSI's primary responsibility in mass transit (OIG, 2008, p. 9). In February 2009, the DHS OIG's report entitled *Effectiveness of TSA's Surface Transportation Security Inspectors*, described the BASE assessment as TSA's program to assess the security posture of a mass transit or passenger rail system against 17 specific security and emergency management action items (GAO, 2009b, p. 21). These action items were developed by TSA and FTA and address current security threats and risks that confront transit agencies (GAO, 2009b, p. 21). The action items are also a primary source of vulnerability information that identify and prioritize gaps in security and emergency preparedness programs (GAO, 2009b, p. 21). A BASE assessment is composed of a series of interviews with stakeholders using more than 190 security questions (OIG, 2009, p. 5). Stakeholder responses are assigned numerical values and, based on these scores; the mass transit agency receives an overall score for each of TSA's six transit security fundamentals (OIG, 2009, p. 5). To validate the responses of stakeholders, TSIs review documents, question personnel, and observe security measures within the transit system (OIG, 2009, p. 5). During a BASE review, TSIs often work with the local agency security director to create or improve security plans and protocols, and advise stakeholders on ways to address vulnerabilities (OIG, 2009, p. 5).

In June 2009, the United States Government Accountability Office (GAO) issued a report entitled, *Transportation Security, Key Actions Have been Taken to Enhance Mass Transit and Passenger Rail Security, but Opportunities Exist to Strengthen Federal Strategy and Programs*. The report highlighted the fact that the first round of BASE assessments enabled TSA officials to identify the need for increased security training for front line employees at mass transit and passenger rail systems (GAO, 2009b, p. 21). Another highlight of the BASE assessment process was the identification of best industry practices to serve as effective security models for other mass transit systems (OIG, 2009, p. 6). TSA has produced 55 such smart security practices that have been distributed to

mass transit systems for their consideration (OIG, 2009, p. 6). In the future, the TSA plans to use BASE assessments to help formulate security regulations, and allocate funding for asset-specific security grants (OIG, 2009, p. 6). The TSA also plans to introduce a performance measure for its BASE review program (GAO, 2009b, p. 32). It plans to calculate this measure by comparing the results from the first and second round of BASE reviews for the nation's top 100 largest mass transit and passenger rail systems (GAO, 2009b, p. 32). It also plans to introduce additional outcome performance measures in the future, including an overall risk reduction measure tied to the BASE program (GAO, 2009b, p. 32).

In fiscal year 2007, TSIs conducted BASE reviews at 53 mass transit and passenger rail systems, including 44 that were ranked in the top 50 in the nation based on ridership (GAO, 2009b, p. 38). As of February 2009, TSIs had conducted Base Reviews at 91 mass transit and passenger rail agencies, including 82 of the largest agencies (GAO, 2009b, p. 35). As of April 2010, TSIs had conducted security assessments at 142 mass transit and passenger rail agencies (GAO, 2010b, p. 15).

Secondly, TSIs increase TSA's domain awareness by producing station profiles and by acting as liaisons between TSA's Transportation Security Operations Center (TSOC) and transportation systems (OIG, 2009, p. 9). TSIs produce station profiles that emergency responders can use to understand the layout of a mass transit station (OIG, 2009, p. 9). The detailed profiles include all of the stations physical characteristics and security features including photographs, maps, and points of contact (OIG, 2009, p. 9). As of April 2010, TSIs had conducted over 1,350 site visits to mass transit and passenger rail stations to complete station profiles (GAO, 2010b, p 15).

The DHS OIG in its February 2009 report characterized the TSI's role as assessors, advisors, and liaisons, primarily in the mass transit and freight rail modes (OIG, 2009b, p. 1). TSIs also contribute to TSA's knowledge of bus and rail systems by responding to security incidents. TSIs act as liaisons between the TSOC and the mass transit agency during security incidents (OIG, 2009b, p. 1). TSIs provide specific, local

information to TSA headquarters personnel in response to a security incident or other emergency (OIG, 2009b, p. 3). They are available at any hour of the day for response to an incident (OIG, 2009b, pp. 2, 9).

In their liaison capacity, TSIs maintain relationships with more than 2,000 stakeholders around the nation, including mass transit agencies, freight rail operators, local law enforcement, and others (OIG, 2009b, p. 9). TSIs act as regional liaisons to transit system managers and security directors, and they can discuss stakeholder's use of grant funds (OIG, 2009, p. 2). TSIs conduct thousands of hours of stakeholder outreach each year in personal meetings with mass transit officials (OIG, 2008, p. 16). They attend stakeholder conferences and events (OIG, 2008, p. 16). Maintaining good relationships with mass transit personnel is an essential part of a TSIs job, and many stakeholders view their local TSI as the face of the TSA (OIG, 2008, p. 16).

Third, TSIs participate in VIPR team operations, which provide an unannounced, high-visibility presence in a mass transit or passenger rail environment (OIG, 2009b, p. 2). VIPR teams may consist of Transportation Security Officers (TSOs), Behavior Detection Officers (BDOs), Federal Air Marshals (FAMs), Explosive Detection Canine Teams (EDCTs), Transit Police Officers (TP), and TSIs. Some VIPR operations are coordinated with the local stakeholder by the TSI's supervisor, the AFSD for Surface Transportation (OIG, 2009, p.10).

DHS' Inspector General (IG) characterized a TSI as a patroller who monitors suspicious activity and whose presence may deter terrorist activity during a VIPR operation (OIG, 2009, p. 10). TSIs add value to VIPR operations but less than other participants (OIG, 2009, p. 10). TSIs have less behavioral detection training than Behavior Detection Officers. Unlike FAMS and Transit Police, the TSIs have no law enforcement authority. Moreover, unlike Transportation Security Officers or EDCTs, TSIs have no training in passenger screening and are unable to detect explosives (OIG, 2009, p. 10). However, TSIs may be more familiar with a transit system than many participants and fulfill a VIPR deployment's ultimate purpose of providing a visible and

unpredictable presence in a mass transit environment (OIG, 2009, p. 10). Some TSIs also informally educate other VIPR participants about the surface mode or the individual transit system (OIG, 2009, p. 10).

The use of TSIs to support VIPR operations is a controversial subject. The VIPR program Concept of Operations states that VIPR operations should involve passenger screening, inspections, and law enforcement in coordinated activities; however, the TSI's role is limited to planning, educating, and patrolling, and the TSIs feel underutilized during VIPR operations (OIG, 2009, p. 11). The IG noted that some transit agencies have specific agreements with the TSA on how VIPR exercises will be carried out, and other transit agencies have yet to even approve VIPR operations on their systems (OIG, 2009, p. 11).

TSA policymakers strongly support the potential role of TSIs in VIPR operations. In May 2008, TSA began hiring 75 new TSIs. This would enable the TSA to increase TSI participation in VIPR teams from two percent to 25 percent (OIG, 2009, p. 11). The OIG noted that as of February 2009, the TSA was only conducting 15 VIPR operations a month, totaling about 120 hours of monthly VIPR activity. Hence, there was not enough VIPR activity to dedicate 25 percent of 175 TSIs to these operations (OIG, 2009, p. 11).

From its inception in FY 2005 through FY 2007, the TSA was authorized 100 full-time TSIs (GAO, 2009b, p. 54). In June 2008, the TSA reported a staffing level of 93 TSI positions (GAO, 2009b, p. 54). The *9/11 Commission Act* of 2007 authorized the TSA to increase the number of TSIs to a maximum of 200 full time positions through FY 2011 (GAO, 2009b, p. 54). Based on that authorization, the TSA has more than doubled the size of the STSIP to 201 inspectors as of April 2010 (GAO, 2010a, p. 15). The actual numbers of TSI's that are needed for the TSA to carry out its mission in this program is unknown (GAO, 2010a, p. 15). In June 2009, GAO reported that the TSA had no plan for the STSIP that explained the optimal workforce size to address its current and future program needs GAO, 2009b, p. 55). By March 2010, the TSA did not have a firm date for the completion of the plan (GAO, 2010a, p. 15).

TSIs are assigned to field offices. In April 2008, TSA announced plans to expand the number of STSIP field offices nationwide, from 22 to 54 (GAO, 2009b, p. 56). Under a new reporting structure the TSA planned to place 31 of 32 new field offices under the command of Federal Security Directors (FSD) and Assistant Federal Security Directors (AFSD) for Inspections (GAO, 2009b, p. 56). As of February 2009, TSIs were still organized into 11 primary offices and 10 satellite offices in cities with large mass transit systems or heavy freight rail traffic. Primary field offices included Boston, New York, Philadelphia, Washington, D.C., Jacksonville, Houston, Chicago, Cleveland, Seattle, San Francisco, and Los Angeles. Secondary field offices included Anchorage, Baltimore, Pittsburgh, Charlotte, Atlanta, Miami, St. Louis, Salt Lake City, and Phoenix, and Minneapolis (OIG, 2008, pp. 11, 12).

The plan for the utilization of the TSIs time was reported in TSA's FY 2009 *Regulatory Activities Plan* (GAO, 2009b, p. 54). The plan requires TSIs to split their time between mass transit and passenger rail and freight, with a minimum of about 40 percent to mass transit and passenger rail and 60 percent of their time dedicated to freight (GAO, 2009b, p. 54).

C. IMPLEMENTING THE RECOMMENDATIONS OF THE 9/11 COMMISSION ACT OF 2007

Public Law 110-53-August 3, 2007, also known as *Implementing Recommendations of the 9/11 Commission Act* of 2007, states that TSI's should be used to assist surface transportation carriers, operators, entities, and facilities to enhance their security against terrorist attacks and other security threats, and to assist the Secretary in enforcing applicable surface transportation security regulations and directives (IRCA. 2007)

These requirements included requiring TSIs to have the relevant transportation experience and other security and inspection qualifications and to conduct compliance inspections and enforce applicable security regulations and directives (OIG, 2008, p. 7). The security standards and mission must be consistent with agreements between the DHS and DOT (OIG, 2008, pp. 7, 8). The TSA must consult with surface transportation

entities on TSIs' duties, responsibilities, authorities, and mission (OIG, 2008, pp. 7, 8). The act also requires consultation on strategies to improve transportation security and ensure compliance with security requirements (OIG, 2008, pp. 7, 8). The act prohibits DHS from issuing fines to mass transit agencies unless the agency is in violation, and the DHS has sought corrective action through written notice, and the agency does not take corrective action or propose an acceptable alternative means of compliance within a reasonable amount of time (OIG, 2008, pp. 7, 8). The act also required the DHS Secretary to ensure that the TSI's mission is consistent with any relevant risk assessments required by this act (OIG, 2008, pp. 7, 8).

The act also directed that no later than September 30, 2008, the DHS OIG shall transmit a report to the appropriate Congressional committees on the performance and effectiveness of surface transportation security inspectors, whether there is a need for additional inspectors; and other recommendations (OIG, 2009, p. 26).

D. DHS' JUNE 2008 OFFICE OF INSPECTOR GENERAL'S (OIG) FINDINGS ON THE STSIP

Prior to responding specifically to the reporting requirements of the *9/11 Commission Act* of 2007, the DHS OIG reviewed TSA's STSIP and made three findings on the program (below). In June 2008, the OIG issued its report on the subject, entitled *TSA's Administration and Coordination of Mass Transit Security Programs*.

First, the OIG found that the STSIP mission needs clarification (OIG, 2008, p. 8). TSIs are hindered in carrying out their mission for providing formal oversight of mass transit agencies because comprehensive security regulations do not exist for mass transit. A compliance element would strengthen the TSIs' BASE assessments (OIG, 2008, p. 9). The OIG reported that mass transit agencies questioned the usefulness of BASE assessments because their transit systems had insufficient resources to address the identified vulnerabilities (OIG, 2008, pp. 9, 10). Stakeholders also said they were uncertain how the TSIs were using the information they were gathering (OIG, 2008, pp. 9, 10). Furthermore, unless the assessments were tied to grant funding to address the vulnerabilities that BASE assessments identified, then they had limited value (OIG, 2008,

p. 10). TSIs reported to the IG that mass transit agencies' governing boards are not motivated to institute changes to increase security without compliance standards and TSIs need the authority to issue citations (OIG, 2008, pp. 9, 10).

The IG opined that the best option for an effective oversight program is a consultative process to develop compliance standards (OIG, 2008, p. 10). Grant funding based upon assessments would provide an incentive to improve security, but compliance regulations to go along with the BASE assessments are also necessary (OIG, 2008, p. 11). The IG recommended that specific, feasible security standards be developed for mass transit systems; that applicable BASE assessments be incorporated into the process; and that the TSA consult with DOT; and relevant transit associations like the American Public Transportation Association, in the development of the standards (OIG, 2008, pp. 10, 11, 18). The TSA did not concur with the recommendation and said that it already consults with the DOT other federal security partners and the mass transit and passenger rail communities in the standards development process (OIG, 2008, p. 20). The IG disagreed that voluntary compliance with security best practices is the same as mandatory compliance with security standards and regulation (OIG, 2008 pp. 20–21). The IG noted that the *9/11 Commission Act* of 2007 requires compliance inspections and enforcement of security regulations and directives and the TSA has not promulgated the regulations (OIG, 2008, pp. 20–21).

Second, the OIG found that the STSIP command structure inhibits TSI effectiveness (OIG, 2008, p. 11). TSI s priorities are set by entities not in their chain of command (OIG, 2008, p. 11). They respond to taskings from multiple FSDs, and multiple TSA HQ components with divergent objectives (OIG, 2008, p. 11). TSIs are pulled in multiple directions and have difficulty completing long-term objectives in mass transit (OIG, 2008, p. 11). The TSA is not benefitting from, or building on the knowledge and expertise of the TSIs (OIG, 2008, p. 11). TSIs complained to the IG those FSDs had moved aviation inspectors with no rail experience into TSI positions and that others were hired that did not have sufficient relevant surface transportation experience for the job (OIG, 2008, p. 14). The IG took note of the fact that the *9/11 Commission Act* of 2007 required that TSIs have relevant transportation experience (OIG, 2008, p. 11). The IG

recommended moving the STSIP away from the FSDs to TSA HQ for supervision for improved management, as it was prior to December 2006 (OIG, 2008, pp. 11, 14, 17). The TSA disagreed with the recommendation and indicated it would strengthen and clarify reporting lines and oversight responsibilities (OIG, 2008, pp. 18–19). The IG in turn disagreed with TSA policy makers and maintained that the TSIs should be placed under direct headquarters supervision (OIG, 2008, pp. 18–19).

Third, the OIG found that the TSA needs to coordinate its communication efforts (OIG, 2008, p. 15). Even though TSA policy makers and TSIs conduct substantial outreach with mass transit agencies, TSIs were not provided with enough information from TSA policymakers for TSIs to be viewed by the stakeholders as a viable communications link to TSA headquarters (OIG, 2008, p. 15). The lack of coordination between policymakers at TSA headquarters and TSIs in the field has affected the flow of information to and from stakeholders (OIG, 2008, p. 16). TSIs agreed and indicated that this situation limited their credibility with stakeholders (OIG, 2008, p. 16). The IG recommended that policymakers at the TSA headquarters level provide the TSIs with information and updates on relevant security programs; that TSIs be invited to local meetings with stakeholders; and TSI BASE assessments and station profiles are made available to the appropriate personnel at TSA headquarters in order to improve communications flow (OIG, 2008, pp. 15–17). The TSA's policymakers concurred in part with the recommendation and advised that BASE assessments and station profiles are provided to appropriate personnel and that dissemination after that is on a need to know basis (OIG, 2008, p.19). The IG asked for more proof that the personnel with a need to know actually have access to the information (OIG, 2008, pp. 19, 20).

The OIG noted that TSIs participating in VIPR operations are unarmed and run the risk of becoming a target if mistaken for federal law enforcement officers (OIG, 2008, p. 28). TSA screeners and behavioral detection officers deployed on VIPR teams face the same risk (OIG, 2008, p. 28). TSIs considered their participation in VIPR operations to be unproductive and one of the least effective uses of their time (OIG, 2008, p. 29).

E. DHS' OFFICE OF INSPECTOR GENERAL'S (OIG) FEBRUARY 2009 REPORT PURSUANT TO THE 9/11 COMMISSION ACT

In February 2009, the DHS OIG, pursuant to its responsibilities under the Implementing Recommendations of the *9/11 Commission Act* of 2007, issued a report entitled *Effectiveness of TSA's Surface Transportation Security Inspectors*. The OIG reported that, generally, the TSA is improving security in the mass transit mode through the inspection program (OIG, 2009, p. 1). Security gaps are identified through the BASE Assessments (OIG, 2009, pp. 1, 5). TSIs increase TSA's domain awareness by producing station profiles and by acting as liaisons between the Transportation Security Operations Center and mass transit systems (OIG, 2009, pp. 1, 9). TSIs also participate in VIPR operations, which provide an unannounced, high-visibility presence in the mass transit or passenger rail environment (OIG, 2009, pp. 1, 10). However, challenges in improving effectiveness of the TSIs remain (OIG, 2009, p. 1). The report concluded generally, that the STSIP appears understaffed for the long term and an aviation focused command structure has reduced the quality and morale of the workforce (OIG, 2009, p. 1). The OIG made the following specific recommendations.

First, the OIG recommended that the TSA administrator assess how VIPR operations can better use TSI resources and initiatives, then develop and execute a plan to conduct VIPR operations that integrate TSI activities (OIG, 2009, p. 12). The TSA partially concurred with the IG's recommendation (OIG, 2009, p. 12). TSA policymakers agreed that the TSIs and their unique expertise should be integrated into VIPR planning and deployment and they addressed the potential of the TSIs in the *VIPR Team Capabilities and Operational Deployment Guide* (OIG, 2009, p. 12). The TSA did not agree that TSIs' comprehensive inspection activities, such as the BASE assessment, should be integrated into VIPR operations. It was concerned that doing so would fundamentally alter the nature and meaning of VIPR operations (OIG, 2009, pp. 12–13).

OIG agreed with the TSA that integrating regulatory inspections would alter the nature and meaning of VIPR operations (OIG, 2009, p. 31). Furthermore, the IG acknowledged the potential conflicting purposes of conducting an operation while simultaneously performing a BASE assessment or compliance inspection, if regulations

are enacted (OIG, 2009, p. 13). The IG indicated that TSIs are well positioned to carry out station profiles and physical verification during a VIPR operation; however, the OIG opined that the TSA will be challenged to increase integration of TSIs in VIPR operations (OIG, 2009, p. 13). Beyond advanced planning and passive operation, the OIG was unclear on what extent TSA was willing to have TSIs support VIPR operations (OIG, 2009, p. 13). The OIG urged the TSA to continue to look critically at how TSI's fit within the VIPR mission (OIG, 2009, pp. 12–13).

Second, the OIG recommended that the TSA administrator examine how many TSIs are needed to perform necessary functions by assessing current and anticipated future duties. The TSI workforce should then be expanded to ensure each field office is sufficiently staffed (OIG, 2009, p. 16). The OIG noted that in its June 2008 report, *TSA's Administration and Coordination of Mass Transit Security Programs* that it had recommended that the TSIs play a greater role in TSA's grant programs (OIG, 2009, p. 13). The OIG clarified its vision on how the TSIs would be used to support the grant program by noting that TSIs develop considerable asset-specific information through routine assessments and consultation with surface stakeholders (OIG, 2009, p. 15). TSIs can physically verify the use of grant funds through direct observation, and TSI assessments can provide transparent substantiation for funding decisions (OIG, 2009, pp.13, 15).

TSA has not determined how many inspectors it needs for its future duties, although it requested 102 inspectors for FY 2010 (OIG, 2009, p. 14). The force is small in comparison to other federal agencies with inspectors (OIG, 2009, p. 14). The DOT employs 1,350 inspectors to perform safety inspections for the freight rail, pipeline, and highway modes (OIG, 2009, p. 14). The USCG employs approximately 1,000 inspectors to perform safety and security inspections in the maritime mode (OIG, 2009, p. 14). In contrast, the TSIs numbered approximately 175 as of the date of the OIG report (OIG, 2009, p. 14).

Pending TSA rail regulations will require enforcement by TSIs (OIG, 2009, p. 14). The regulations will require rail entities to designate a security coordinator, report significant security incidents to TSA, and provide a secure chain of custody for hazardous

materials incidents for freight rail (OIG, 2009, p. 14). The TSA indicated that it was waiting for the regulations to be published before assessing its TSI resource needs (OIG, 2009, p. 14). The TSA also has plans to assign responsibilities to the TSIs in the pipeline, highway, and motor carrier modes (OIG, 2009, pp. 14, 15). The IG noted that the STSIP needs additional TSIs at most field offices (OIG, 2009, p. 16). Of the 54 field offices, 30 had only two TSIs and 4 field offices had one (OIG, 2009, p. 16). On most assignments the TSIs are engaged in, two TSIs are required to work together for safety and accuracy reasons (OIG, 2009, p. 16). When leave and training time are taken into consideration, there are large gaps in TSI resources (OIG, 2009, p. 16).

The TSA concurred with the IG's recommendation (OIG, 2009, p. 17). They indicated that they were addressing the need to maintain 2 TSIs per field office by using a TSI from another field office to fill in, or by borrowing cross trained Inspectors from the aviation and cargo modes to assist the TSIs (OIG, 2009, p. 17). The IG took note of the fact that it had been informed by the TSIs supervisors, AFSDs-surface that aviation and cargo inspectors are incapable of performing most surface TSI duties, and that it would be unsafe to use them for this assignment (OIG, 2009, p. 17). The IG further noted that FSDs have exacerbated the problem by hiring surface TSIs without mass transit or freight rail experience (OIG, 2009, p. 17).

Third, the OIG recommended that the TSA administrator eliminate practices that undermine efforts to establish a more transparent chain of command (OIG, 2009, pp. 18, 23). The STSIP office should also direct new policies and procedures to FSDs to require them to solicit comments from AFSDs-surface prior to hiring surface inspectors (OIG, 2009, p. 23). Specifically, the OIG reported that the STSIP command structure inhibits program effectiveness (OIG, 2009, p. 18). In December 2006, TSI's were moved from reporting directly to surface transportation-focused supervisors to aviation-focused supervisors (OIG, 2009, p. 18). Consequently, TSIs have been hired without appropriate surface experience and TSIs have been tasked with non-surface related tasks (OIG, 2009, p. 18). The OIG reported that FSDs, who are TSIs superiors in the field, are aviation oriented; the surface mode is a second-tier priority for them; and they generally lack a surface transportation background (OIG, 2009, p. 20). FSDs have hired people who do

not have enough surface experience for TSI positions (OIG, 2009, p. 21). Between December 2006 and February 2009, FSDs had hired 18 TSIs (OIG, 2009, p. 21). Of the non entry-level positions, 69 percent were filled with individuals with no rail or mass transit experience (OIG, 2009, p. 21). Those who lacked the relevant experience included a TSI who was aviation trained, security instructors, security officers (screeners), and a hazmat truck driver (OIG, 2009, p. 21). FSD's have also tasked TSIs with non-surface related tasks, often at airports, such as handing out plastic bags at the security checkpoints, or monitoring the checkpoint exit lane during periods when there was no exigency like a heightened security threat (OIG, 2009, pp. 22, 23).

The TSA policymakers disagreed with the IG and stated that the TSA had chosen its present command structure because FSDs are best suited to interact with the local law enforcement community and local mass transit agencies (OIG, 2009, p. 24). The TSA policy makers also believe TSI communication and reporting lines are clear (OIG, 2009, p. 24). The IG noted that consistent with its finding in June 2008, TSIs should be placed under direct headquarters supervision, and again tried to convince TSA management of the need to do so without success (OIG, 2009, p. 25). Consequently, the IG withdrew its original recommendation to place the TSIs under headquarters command, in lieu of its present recommendation, to eliminate practices that undermine efforts to establish a more transparent chain of command (OIG, 2009, p. 25).

F. INTERVIEWS OF CHIEFS OF POLICE FROM TIER I MASS TRANSIT AGENCIES

In order to conceptualize the issues associated with this program, Chiefs of Police from Tier I and Tier II mass transit agencies were interviewed for their first hand subject matter knowledge. These security professionals provided information and expert opinion that expanded upon what was available from open source materials. The interviews provided context to the U.S. government reports and open source data and helped to shape the policy options presented in a later section of the thesis.

The three Chiefs of Police of Tier I transit agencies were asked the following questions during their interviews:

> Please describe how your mass transit agency applies the TSA's Surface Transportation Security Inspection Program (STSIP) to your agency's Security efforts. What is good about the program, and how can it be improved? What recommendations can you make to Tier II mass transit agencies concerning this program? Follow up questions were asked as appropriate for clarification and/or expansion of the Chief's response. Responses were grouped into five broad categories: Application of the program to their own agencies; Positive aspects of the program; Recommendations for Tier II agencies; Program criticisms; and Recommendations for overall program improvement.

First, on the broad question of how the agency applies the STSIP to its own security efforts, the Tier I Chiefs of Police all reported using the TSIs to conduct BASE reviews at their mass transit agencies. The BASE reviews were coupled with threat and vulnerability studies. The results enabled the mass transit agencies to identify security gaps. When the security gaps could not be addressed by agency funds alone, the results of the BASE reviews were used as justification for security grant proposals.

Concerning VIPR operations however, only one of three Tier I mass transit chiefs reported using the TSIs to support VIPR operations. In that one agency, the TSIs coordinated their activities with the Transit Police. The TSIs participated in the VIPR operations as non-law enforcement observers in civilian clothing. Regarding the positive aspects of the program, the Tier I chiefs were unanimous in their praise for TSIs for their performance in conducting BASE reviews. The TSIs were credited with being cooperative with mass transit agencies and explaining the process clearly. The BASE reviews assisted the mass transit agency in meeting DOT-FTA safety and security requirements. The BASE review was also used by one Chief to report back to the executive management of the mass transit agency on security deficiencies. In the one Tier I mass transit agency where the TSIs participated in VIPR operations, the TSIs coordinated their activities with the transit Police department closely.

The only specific recommendation for Tier II mass transit agencies was that training should be provided for the TSIs on the mass transit agency's system to help insure the TSIs' safety.

Several criticisms of the program were made. The duties of the TSIs were considered overly broad, encompassing air, mass transit, and ports. TSIs are understaffed, with a vague mission, and have too "many balls in the air to be effective." The STSIP was never given a clear direction or a mission. The TSIs' overall mission is not understood, except for the BASE review. One chief does not see a role at his agency for TSIs at this time beyond the BASE reviews. The TSIs were created with the idea of performing a regulatory function, which did not happen. The chief views the STSIP as having two problems, mission and authority. The chief does not see clear authority in the legislation for the TSIs. The chief cooperates with TSIs but does not allow them on his agency's property without permission.

The Tier I chiefs had several observations and recommendations for improvement in the STSIP. One chief advised that because the TSI role is not well defined; he "frankly does not know what they do." The STSIP needs a clear mission and scope of work. Having TSIs report to FSDs instead of the TSA's Mass Transit Division contributes to the problem. One chief is unable to convince his Board that passenger screening is a good idea for improving security and thinks that the TSA could do a better job of outreach concerning security priorities with transit agency executives and members of the governing boards. Mass transit is one of the most desirable of targets for terrorists and a balance needs to be struck between public sensitivities toward passenger screening and their security from terrorism. The TSA has a role in communicating this message and influencing the leadership of mass transit agencies.

G. POLICY IMPLICATIONS ATTRIBUTABLE TO INTERVIEWS OF TIER I CHIEFS OF POLICE

1. Implications for STSIP Effectiveness for Tier I

Policy implications associated with the overall effectiveness of the STSIP for Tier I agencies are evident from the interview data. All Tier I chiefs reported using TSIs to conduct BASE reviews, which were combined with vulnerability studies. The results identified security gaps, and BASE reviews were used to justify security grants to fill those security gaps. However, the data calls into question the effectiveness of other

elements of the STSIP, specifically in relation to TSIs' participation in VIPR operations. Noteworthy was that TSIs were used to support VIPR operations at only one Tier I mass transit agency. One Tier I chief questioned the TSIs' authority to perform their operations in the local setting. Other concerns also contribute toward diminished effectiveness such as the overly broad mission of the TSIs. One Tier I chief acknowledged that he did not know what TSIs do.

2. Implications for TSGP

If TSIs are not being utilized to their full capacity to support VIPR operations, perhaps they can be used more effectively to assist in conducting vulnerability assessments that are comparable across regions and mass transit agencies thereby strengthening the Risk methodology the TSA uses to allocate TSGP funding. Likewise, perhaps TSIs can be trained to assist in developing threat data that can also be used to better inform the TSA risk formula. Chiefs were praiseworthy of the TSIs in this regard and the BASE reviews were coupled with threat and vulnerability studies.

H. INTERVIEWS OF CHIEFS OF POLICE FROM TIER II MASS TRANSIT AGENCIES

Of the seven Chiefs of Police of Tier II transit agencies who were interviewed, all were asked the following question:

> Please describe how your mass transit agency applies the TSA's Surface Transportation Security Inspection Program (STSIP) to your agency's Security efforts. What is good about the program, and how can it be improved? Follow up questions were asked as appropriate for clarification and/or expansion of the Chief's response. Responses were grouped into five broad categories: Application of the program to their own agencies; Positive aspects of the program; Program criticisms; and Recommendations for overall program improvement.

First, on the broad question of how the agency applies the program to its own security efforts, six of the seven Chiefs of Police of Tier II transit agencies reported that their agencies participated in BASE reviews conducted by TSIs. Concerning VIPR operations, six of seven chiefs reported that TSIs participated in VIPR operations. The

seventh chief advised that he is uncertain if TSIs participated in VIPR operations because he interacts with so many TSA representatives with different job titles he is uncertain which TSA employees were involved. One chief reported that TSIs have been invited to and have participated in drills and exercises with his mass transit agency.

Concerning the positive aspects of the program, the TSIs have been generally well regarded and the BASE reviews have contributed to improved security. One chief reported that he was in communication with a STSIP supervisor several times a week. The TSIs' supervisor accompanies the TSIs in their duties often, but not always, because the supervisor is sometimes in travel status. The TSIs have performed the BASE assessments for his agency twice and have shared the results with the chief. The TSIs have reviewed the progress on construction projects and provided security feedback. The TSIs have performed unannounced inspections of rail stations and reported the results of their inspections back to the chief for appropriate follow up action. The TSIs have enjoyed notable success by identifying at least two instances of possible terrorist planning. These and other suspicious matters have been referred to the local Joint Terrorism Task Force. The TSIs have reinforced security issues that his department was already aware of. Even though the transit agency's executive management does not always accept recommendations from his own department, they seem be more interested in listening to security recommendations from an independent outside source like the TSA. One agency's BASE review results have improved from 2006 until 2010, and the TSIs have been effective in driving the mass transit agency to make security improvements.

Several criticisms of the STSIP were made. A chief advised that he has never seen the results of any of the BASE reviews conducted for his mass transit agency. Some TSIs come from a railroad safety background and not a security background and, therefore, do not understand that a written procedure cannot exist for every eventuality in security the way that written procedures exist for safety requirements. The TSIs now answer to an AFSD rather than the TSA's Mass Transit Division. The AFSD has worked diligently to smooth out relations between the TSIs and the transit agency, which initially had a rocky start. The chief was not pleased with the BASE review process. The chief

thought that the BASE review process was inadequately explained to him, and the TSIs were not true to their word on how the reviews were to be conducted. TSIs were also overbearing in relation to VIPR operations, demanding access to security cameras, without prior discussion, and demanding information about security sensitive areas of the agency without adequate explanation.

Concerns particular to VIPR operations included the fact that TSIs are not law enforcement officers participating in what is considered a law enforcement mission. TSIs typically have not had law enforcement backgrounds, and the TSIs' level of security training is questionable. One chief noted that the TSIs do not report to their superiors through the Federal Air Marshals, often do not bring supervisors with them on VIPR operations, and, therefore, lack effective command and control. Another concern raised was the TSIs' lack of communications capability. A chief noted that he has been unable to provide TSIs with police radios used by his department because they are restricted to law enforcement use. The chief characterized the TSIs as in essence unarmed security officers without direct supervision, and he is concerned that his department has become responsible for their safety and security.

Another chief expressed concerns over a lack of coordination between TSIs and the law enforcement side of the TSA. The two do not coordinate well and have attempted to schedule VIPR operations independently of one another. It has been difficult to get them to communicate with each other. The chief would like to see better coordination, and combining of forces for greater efficiency. The chief also expressed concerns that TSIs have not been law enforcement officers and have not had law enforcement training or been empowered with arrest authority. TSIs lack the sixth sense that law enforcement officers develop for recognizing problems and threats. On the positive side, the TSIs provide an extra set of eyes.

Another chief was not particularly concerned that the TSIs are not law enforcement officers, and had no radio communications. He did express concern however, over how TSIs may react if a VIPR operation resulted in a dangerous arrest or

an incident involving an explosive or a shooting because of their lack of law enforcement backgrounds and training. The chief expressed a desire for a higher confidence level in the TSIs' training.

The Tier II Chiefs had recommendations for improvement of the program. Their top concern was the TSIs' lack of law enforcement background and training and the need for such a background. One chief suggested that TSIs be removed from VIPR operations since they add so little to the mission, in contrast to the other participants. It was further suggested that, if TSIs are involved in VIPR operations; they hold the status of sworn law enforcement officers. At minimum, TSIs should be required to have a security background, in order to engender confidence in their findings and make recommendations during BASE reviews. Communications capabilities of TSIs need to be improved, and TSA needs to clear up the confusion over who is participating in the VIPR operations.

As far as specific recommendations on the BASE review process, TSA and FTA requirements need to be better coordinated. Since mass transit agencies with rail service already answer to state oversight agencies, they cannot be expected to "serve two masters." There should be better coordination between state safety oversight and the TSIs. Further, there needs to be only one national standard for the security plan. TSIs should present findings on BASE reviews formally and in person to mass transit executive management personnel. Presentations should be made to executive management the way APTA peer review briefings are provided. Executive management of mass transit agencies should hear about security concerns directly from the TSA since it will have a greater impact than hearing about concerns second hand.

I. POLICY IMPLICATIONS ATTRIBUTABLE TO INTERVIEWS OF TIER II CHIEFS OF POLICE

1. Implications for STSIP Effectiveness for Tier II

Policy implications associated with the overall effectiveness of the STSIP for Tier II agencies are evident from the interview data. Most Tier II chiefs reported using TSIs at

their mass transit agencies to conduct BASE reviews, and at one agency the TSIs participate in drills and exercises. TSIs were generally but not uniformly well regarded by Tier II chiefs in regard to BASE reviews. TSIs have been effective in driving the mass transit agencies to make security improvements. Administratively, the process could be improved with better coordination between the TSA and FTA over safety and security requirements, and TSIs could do a better job of communicating the results of their reviews to transit agencies' executive management.

However, as with Tier I mass transit agencies, the data calls into question the effectiveness of other elements of the STSIP, specifically in relation to TSIs' participation in VIPR operations. The concerns included the TSI's lack of law enforcement status, training, lack of command and control, and communications capabilities. If TSIs are not qualified to participate in VIPR operations, it raises the question of how TSIs could be better utilized.

2. Implications for TSGP

If TSI's are not being utilized to their full capacity to support VIPR operations, perhaps they can be used more effectively to assist in conducting vulnerability assessments that are comparable across regions and mass transit agencies, thereby strengthening the Risk methodology the TSA uses to allocate TSGP funding. Likewise, perhaps TSIs can be trained to assist in developing threat data that can also be used to better inform the TSA risk formula.

J. CHAPTER SUMMARY, DISCUSSION AND CONCLUSIONS

The STSIP originated in the *2005 DHS Appropriations Act*, which called for the deployment of up to100 federal rail compliance inspectors; positions that evolved into Surface Transportation Security Inspectors (TSIs.) (OIG, 2009, p. 3) The TSI's mission evolved from one of compliance inspection to collaboration with stakeholders on security enhancements (OIG, 2008, p. 9). TSIs have three principal responsibilities; performing base assessments; increasing domain awareness; and participating in VIPR operations (OIG, 2009, p. 2).

Performing base assessments for security enhancement (BASE) reviews is the TSI's primary responsibility in mass transit (OIG, 2008, p. 9) and involves assessing the security posture of a mass transit or passenger rail system against 17 specific security and emergency management action items developed by TSA and FTA (GAO, 2009b, p. 21). Action items are a primary source of vulnerability information, which identify and prioritize gaps in security and emergency preparedness programs (GAO, 2009b, p. 21). TSIs increase domain awareness by producing station profiles and by acting as liaisons between the TSA's TSOC and transportation systems, particularly during security incidents (OIG, 2009, p. 21). TSIs maintain liaisons with more than 2000 stakeholders around the nation, discussing the use of grant funds, and conducting outreach at meetings with mass transit officials (OIG, 2009, p. 9). TSIs also participate in VIPR operations that provide an unannounced, high visibility presence in mass transit (OIG, 2009, p. 2). The DHS IG characterized the TSI as a patroller who monitors suspicious activity and whose presence may deter terrorist activity during a VIPR operation (OIG, 2009, p. 10). The IG further noted that the TSIs add value to the VIPR operation, but less than other participants (OIG, 2009, p. 10). TSIs reported feeling underutilized during VIPR operations (OIG, 2009, p. 11). TSA policy makers strongly support the role of TSIs in VIPR operations. There are approximately 200 TSIs nationwide (GAO, 2009b, p. 54.) however, the TSA has not said how many positions are necessary for the TSA to carry out its mission in this program (GAO, 2010b, p. 15). TSIs split their time between mass transit, passenger rail and freight rail, with a minimum of about 40 percent to mass transit and passenger rail and 60 percent of their time dedicated to freight rail (GAO, 2009b, p. 54).

The DHS OIG reviewed the STSIP and found the program mission in need of clarification (OIG, 2008, p. 8). The OIG recommended that specific, feasible security standards be developed for mass transit systems; that applicable BASE assessments be incorporated into the process; and that the TSA consult with DOT and other relevant associations like APTA on the development of standards (OIG, 2008, pp. 10, 11, 18) The IG noted that the *9/11 Commission Act of 2007* requires compliance inspections and enforcement of security regulations and directives (OIG, 2008, pp. 20, 21).. The IG also

found that the STSIP command structure inhibits effectiveness, and communications in need of improvement, which includes stakeholders who are confused on a number of TSA programs and guidelines (OIG, 2008, p 18). The IG took note that TSIs participating in VIPR operations are unarmed and run the risk of becoming a target if mistaken for federal law enforcement officers (OIG, 2008, p. 28), and that TSIs considered their participation in VIPR operations to be unproductive and one of the least effective uses of their time (OIG, 2008, p. 29).

In February 2009, the DHS OIG reviewed the STSIP pursuant to requirements of the *9/11 Commission Act* of 2007. The IG found continued confusion and disagreement over the role of TSIs in VIPR operations (OIG, 2009, p. 12), and that the TSA had yet to determine the appropriate staffing level for the TSI position (OIG, 2009, p. 14). The IG noted that the TSI position was significantly understaffed when compared to similar inspector positions with other federal agencies (OIG, 2009, p. 14). For example, the DOT employed 1,350 inspectors to perform safety inspections for the freight rail, pipeline and highway modes (OIG, 2009, p. 14). In contrast, the TSA had only 175 TSIs under employment at the time of the review (OIG, 2009, p. 14).

All Tier I chiefs reported using TSIs to conduct BASE reviews, and most Tier II chiefs reported using TSIs at their mass transit agencies to conduct BASE reviews. Tier I and Tier II chiefs were generally praiseworthy of TSIs in regard to BASE reviews, but there were some continuing coordination problems. BASE reviews were coupled with threat and vulnerability studies. The results identified security gaps, and BASE reviews were used to justify security grants to fill those security gaps. TSIs have been effective in driving the mass transit agencies to make security improvements

Both Tier I and Tier II chiefs were critical of TSIs. TSIs were considered to be understaffed; with an overly broad mission, and TSIs could do a better job of communicating the results of their reviews to the executive management of mass transit agencies. The process could be improved with better coordination between the TSA and FTA over safety and security requirements. The results of TSI's reviews could be better communicated to the executive management of mass transit agencies.

Regarding VIPR operations, TSIs were used to support those operations at only one Tier I mass transit agency. Tier II chiefs who were more likely to have TSIs participate in VIPR operations on their property raised concerns over TSI's participation in VIPR operations. The concerns included the TSI's lack of law enforcement status, training, lack of command and control, and communications capabilities.

The TSIs appear to perform a valuable mission in regard to BASE reviews, but beyond that their mission is confusing. Perhaps that accounts for TSA's uncertainty over the appropriate staffing level for the position.

TSIs role in VIPR operations is controversial. TSA management strongly supports the use of TSIs in VIPR operations; however, TSIs feel underutilized (OIG, 2009, p. 11), and consider the activity to be least effective use of their time (OIG, 2008, p. 29). Tier I mass transit agencies do not uniformly use TSIs and Tier II mass transit agencies are generally concerned over their use in VIPR operations due to their lack of training and law enforcement background. The DHS IG even raised concerns over their safety if they were mistaken as a federal agent (OIG, 2008, p. 28).

Given that using TSIs to perform VIPR operations is of questionable merit, the question arises as to how TSIs can be best utilized. The TSA has indicated an intention to use TSIs to support mass transit agencies with grant projects for infrastructure security improvements. Considering the fact that the risk methodology used by the TSA has been characterized by the NAC as flawed and unreliable (NAC, 2010), perhaps the TSI positions could assist in addressing the DHS risk model's weaknesses. Since the risk model does not compare and contrast vulnerabilities in mass transit systems across regions due to a lack of data, and consistent methodologies of gathering that data are not being used (GAO, 2009a, pp. 16–17), TSIs could be trained to work with mass transit agencies to address this weakness. TSI's could also be trained and used to address current weaknesses in developing terrorism threat data for the risk analysis model.

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VI. THE VISIBLE INTERMODAL PREVENTION AND RESPONSE TEAM PROGRAM

A. INTRODUCTION

This chapter is divided into 10 sections. Section A is the Introduction. Section B is intended to provide the reader with an explanation of the origins and evolving mission of TSA's VIPR Program. The requirements placed on the DHS TSA for the VIPR program under the Implementing Recommendations of the *9/11 Commission Act* of 2007 are detailed in section C. Section D describes the DHS OIG's June 2008 findings on the program. A summary of a GAO report to Congress on feedback about the VIPR program from mass transit agencies and an analysis of VIPR after Action Reports is described in section E. Section F is interviewing data of Chiefs of Police of Tier I mass transit agencies. Policy implications attributable to the Tier I chiefs is detailed in section G. Section H is interviewing data of Chiefs of Police of Tier II mass transit agencies. Policy implications attributable to the Tier II chiefs is detailed in section H. Section J is a chapter summary, discussion, and conclusions.

B. BACKGROUND

According to the former TSA administrator Kip Hawley, the VIPR program was formally introduced to mass transit in December 2005 (OIG, 2008, p. 48). The DHS OIG reported that the TSA has provided VIPR teams for mass transit since July 2004, starting with support of the Democratic National Convention in Boston, Massachusetts. (OIG, 2008, p. 6). The GAO reported in July 2009 that VIPR teams provide security nationwide for all modes of transportation (GAO, 2009c, p. 4). VIPR teams were created after the terrorist attack on the Madrid transit system in March 2004 in order to enhance security on U.S. rail and mass transit systems nationwide (GAO, 2009c, p. 4).

The purpose of the VIPR team program is to provide a random, unannounced, unpredictable, high-visibility presence in a mass transit or passenger rail environment (OIG, 2008, p. 6). VIPR teams vary in size and composition. Teams consist of TSA

personnel and may include other federal, state, or local assets (OIG, 2008). The FAMS has been designated as the primary law enforcement entity within the TSA to be the lead agency for coordinating VIPR operations (OIG, 2008). On July 23, 2009, the GAO issued a report entitled *Federal Air Marshal Service, Actions Taken to Fulfill Core Mission and Address Workforce Issues*. The GAO reported that the FAMS was originally established within the U.S. Department of Transportation, Federal Aviation Administration as the Sky Marshal program in the 1970s to counter aircraft hijackers (GAO, 2009c, p. 3). The program was expanded significantly after September 11, 2001 (GAO, 2009c, p. 3). Other VIPR team personnel from the TSA may include TSIs, EDCTs, and Behavioral Detection Officers (BDOs,) who are specially trained to detect high risk individuals based on involuntary physical or psychological behavior (GAO, 2009b, p. 44). TSA's *Concept of Operations (CONOPS) for the Effective Employment of VIPR teams in Mass Transit and Passenger Rail*, issued in October 2007, identifies 10 core components that form the foundation of effective collaboration on VIPR programs (GAO, 2009b, p. 45). These core components are coordination, mission focus, active deterrence, planning, force composition, consistency, training, communications, authority, and continuous improvement (GAO, 2009b, p. 45).

VIPR operations are voluntary and mass transit agencies do not run the risk of losing grant funding by not participating in the program (OIG, 2008). Local mass transit agencies have the power to decide where VIPR operations are deployed on their systems and how the resources are used such as a plain clothes assignment, or in uniform or TSA emblazoned jackets that are visible to the public (OIG, 2008). At the present time, VIPR operations are intended to be planned and scheduled weeks in advance (OIG, 2008). VIPR operations are typically conducted along side transit agency police or security personnel; however, at some transit agencies TSA personnel may operate without participation of local personnel (OIG, 2008, p. 30).

Beginning in July 2007, TSA significantly increased the number and frequency of VIPR deployments, from an average of one exercise per month nationwide, to one or two exercises a week (OIG, 2008). In June 2009, the TSA reported that the frequency of VIPR operations had increased to over 800 VIPR operations at mass transit and

passenger rail systems as of that date (GAO, 2009b, pp. 44–45). Almost all of the operations were intended to enhance security at special events or on holidays rather than in response to specific threats (GAO, 2009b, pp. 44–45).

The GAO reported that during the first quarter of fiscal year 2009, the TSA conducted 483 VIPR operations, with about 60 percent dedicated to ground based aviation facilities (GAO, 2009c, p. 5). The remaining VIPR operations were dedicated to the surface domain, which includes highways, freight rail, pipelines, mass transit, and maritime (GAO, 2009c, p. 5). In all of 2009, TSA conducted more than 1,050 VIPR operations with mass transit and passenger rail systems across the nation (OIG, 2010, p. 19). In 2009, VIPR positions totaled 225. In fiscal year 2010, 338 positions were to be added supporting an additional 15 VIPR teams, at a cost of $50 million (GAO, 2009c, pp. 5–6).

It is too soon to assess the success of VIPR operations. The GAO issued a report to Congress in April 2010, entitled *Surface Transportation Security, TSA Has Taken Actions to Manage Risk, Improve Coordination, and Measure performance, but Additional Actions Would Enhance its Efforts.* The report noted that the TSA had measured its performance in terms of the number of VIPR operations conducted, but had not developed measures to report on the effectiveness of the operations themselves until April 2010 (GAO, 2010a, pp. 13–15). The four measures are, total VIPR asset deployments; completion percentage at high risk locations; percentage of national special security events; and percentage of primary stakeholders with repeat deployments (GAO, 2010a, pp. 13–15).

C. IMPLEMENTING THE RECOMMENDATIONS OF THE 9/11 COMMISSION ACT OF 2007

The TSA was authorized to deploy VIPR teams by the *9/11 Commission Act*, Public Law 110-53, enacted on August 3, 2007, also known as Implementing Recommendations of the *9/11 Commission Act* of 2007 (IRCA, 2007).

The act authorized the Secretary of DHS, acting through the TSA administrator, to develop VIPR teams to augment the security of any mode of transportation at any

location within the United States (IRCA, 2007). In forming the VIPR teams, the TSA was authorized to use any asset of the department including FAMs, TSIs, EDCTs, and advanced screening technology (IRCA, 2007). The TSA was authorized to determine when a VIPR team shall be deployed, and for what duration (IRCA, 2007).

The act required the TSA to consult with local law enforcement officials for the development of operational plans, and to coordinate on relevant information before and after deployment (IRCA, 2007).

D. DHS' JUNE 2008 OFFICE OF INSPECTOR GENERAL'S (OIG) FINDINGS ON THE VIPR PROGRAM

In June 2008, the DHS OIG issued a report entitled *TSA's Administration and Coordination of Mass Transit Security Programs.* During the July 4, 2007, holiday week, simultaneous VIPR operations were launched from TSA headquarters for mass transit operations in New York, Boston, San Francisco, Chicago, Washington, D.C. and several other cities (OIG, 2008, p. 27). The OIG reported that TSA's initial VIPR deployments could have benefitted from more precise planning, better consultation, and more use of local expertise and knowledge (OIG, 2008, p. 27). The initial deployments of VIPR operations occupied local law enforcement resources and strained relations with state and local homeland security officials (OIG, 2008, p. 27). The TSA administrator considered the criticism unfair because TSA headquarters was responding to overseas terrorist activity and decided to move quickly with the deployment of VIPR operations in order to provide security resources for mass transit (OIG, 2008, p. 49). However, based on that experience, TSA has taken measures to improve coordination (OIG, 2008, p. 27). The OIG recommended the development of Memorandums of Agreement between the TSA and individual transit agencies to enhance VIPR program effectiveness (OIG, 2008, p. 27).

The OIG opined that the TSA failed to communicate the timing, procedures or rationale of the July 2007 VIPR deployments either with its own personnel or with the personnel of the mass transit agencies (OIG, 2008, p. 27). Notice of the operations was only received by TSA field offices on the weekend before the event (OIG, 2008, p. 27).

Field offices were reluctant to ask transit police officials to accommodate the request knowing that police deployment schedules are set well in advance (OIG, 2008, p. 28). Complicating the issue was the fact that some Federal Security Directors and the Special Agents in Charge of Federal Air Marshal's offices were at odds over who was in charge of the operations (OIG, 2008, pp. 27–28). As a result, the TSA's first deployments of the program generated controversy among TSA field offices, state and homeland security officials, and mass transit agencies (OIG, 2008, p. 27).

For these initial deployments TSA had little to no experience on the mass transit systems where they were deployed (OIG, 2008, p. 28). They also had no means of communicating with transit police or security personnel (OIG, 2008, p. 28). This resulted in increased use of transit police personnel who had to partner with TSA personnel, thereby increasing the use of Transit Police, and consequently increasing financial costs for mass transit agencies (OIG, 2008, p. 28).

Transit agencies complained that FAMS were not familiar with local laws, local police procedures, or the behavior of individuals encountered on public transportation, or even the scope of their own authority as federal law enforcement officers in the mass transit environment (OIG, 2008, p. 28). The lack of pre-planning also resulted in friction with police unions (OIG, 2008, p. 28). Unions interpreted the introduction of federal agents onto their mass transit systems as a replacement of transit police officers or an acknowledgement that the mass transit agency lacked sufficient police resources to address their security needs (OIG, 2008, pp. 27, 29).

Another problem associated with the initial deployments was the lack of planning coordination between TSA headquarters and the local FAMS field personnel and mass transit personnel (OIG, 2008, p. 29). TSA HQ personnel assigned VIPR operations to rail stations, which conflicted with local transit agency patrol strategies (OIG, 2008, p. 29). Some transit agencies refused some of TSA's VIPR resources and other transit agencies refused all of TSA's VIPR resources (OIG, 2008, p. 29).

E. GAO'S JUNE 2009 REPORT ON THE VIPR PROGRAM

In June 2009, the GAO issued a report entitled Transportation Security; Key Actions have been taken to Enhance Mass Transit and Passenger Rail Security, but Opportunities Exist to Strengthen Federal Strategy and Programs. The GAO reported mixed opinions by mass transit agency officials over the effectiveness of VIPR operations conducted on their systems (GAO, 2009b, p. 45). Thirty mass transit agencies were contacted including Tier I and Tier II mass transit agencies (GAO, 2009b, pp. 45, 46) and five indicated generally that they welcomed the additional resources that the VIPR operations provided to their agencies. Four other agencies indicated that because they were already providing for their own security that VIPR team activities added no significant added security value especially in light of the additional planning and operational costs (GAO, 2009b, p. 45). These four agencies also looked in disfavor of the fact that the VIPR teams were largely unarmed (GAO, 2009b, p. 45).

For its study the GAO reviewed the after-action reports of 104 VIPR operations conducted between November 2007 and July 2008 on mass transit and passenger rail (GAO, 2009b, p. 46). Almost half of the reports identified a lack of interoperable radio communications as a key challenge faced during many VIPR operations (GAO, 2009b, p. 46). This deficiency placed challenges on the ability of TSA members of VIPR operations to communicate information on potential threats, essential for a safe and effective VIPR operation and program (GAO, 2009b, p. 45). Communications in a mass transit environment are more challenging than in an aviation environment in part due to the presence of tunnels and underground systems (GAO, 2009b, p. 46). The GAO took note of the fact that this problem existed despite the issuance of a concept of operations (CONOPS) in October 2007 in which communications was identified as one of 10 core components that form the foundation of effective collaboration (GAO, 2009b, p. 46). TSA officials acknowledged the challenges the VIPR program was facing due to program expansion into mass transit and was taking measures to improve communications, coordination and training of TSA personnel to operate in a mass transit environment (GAO, 2009, pp. 45-47).

F. INTERVIEWS OF CHIEFS OF POLICE FROM TIER I MASS TRANSIT AGENCIES

In order to conceptualize the issues associated with this program, Chiefs of Police from Tier I and Tier II mass transit agencies were interviewed for their first hand subject matter knowledge. These security professionals provided information and expert opinion that expanded upon what was available from open source materials. The interviews provided context to the U.S. government reports and open source data, and helped to shape the policy options presented in a later section of the thesis.

The three Chiefs of Police of Tier I transit agencies were asked the following questions during their interviews:

> *Please describe how your mass transit agency applies the TSA's Visible Intermodal Prevention and Response team program (VIPR) to your agency's Security efforts. What is good about the program, and how can it be improved? What recommendations can you make to Tier II mass transit agencies concerning this program? Follow up questions were asked as appropriate for clarification and/or expansion of the Chief's response. Responses were grouped into five broad categories: Application of the program to their own agencies; Positive aspects of the program; Recommendations for Tier II agencies; Program criticisms; and Recommendations for overall program improvement.*

First, on the broad question of how the agency applies the program to its own security efforts, all three Tier I Chiefs of Police reported participation in the VIPR program, but with limitations. One mass transit agency performs VIPR operations in cooperation and coordination with the Federal Security Director's resources, but without the participation of FAMS. They perform random passenger screening inspections using explosives trace detection equipment.

A second Tier I chief reported participation by his agency in VIPR operations on average once a week. He considers this frequency to be more than enough to achieve the mission of the program. The operations are always performed with transit police department special operations tactical law enforcement officers.

A third Tier I chief reported participation in VIPR operations three to four times a year, in connection with special events, or during periods of elevated threat conditions. The VIPR operations are controlled by the transit police department.

Concerning the positive aspects of the program, besides increased security, one chief noted that VIPR operations contribute to a good relationship with the TSA, which he thinks is important to maintain. The chief recognizes the TSA's desire to conduct these missions, and he wants to assist the TSA. Another chief also noted the importance of assisting the TSA in conducting its mission. A third chief acknowledged the development of better customer service skills by his officers by working with FSD's personnel.

As far as recommendations for Tier II mass transit agencies, one chief noted that the VIPR operations raise a lot of eyebrows by the public due to the significant number of persons assigned to the operations. The chief is unsure of the deterrence and overall effectiveness of the VIPR operations. Another chief noted that training with the FAMS during periods of lower threat levels is important in order to be prepared to work together effectively during periods of increased threat levels. The Tier I chiefs had no other recommendations for improvement of the program on the whole.

Several criticisms of the program were made. One Tier I chief challenges the FAMS' law enforcement authority on his agency's property. The chief has concerns with FAMS being armed. For this reason, he has requested that FAMS not patrol on to his agency's property and the TSA has honored his request. The chief suspects that the FAMS suffer from mission creep in respect with their aviation related responsibilities and simply no longer want to be limited to security of airplanes.

Another chief noted that VIPR operations require the assignment of TP personnel to accompany the TSA personnel for safety reasons. This is an inefficient use of resources because these TP personnel would be performing other important assignments if they were not engaged in the VIPR operation.

G. POLICY IMPLICATIONS ATTRIBUTABLE TO INTERVIEWS OF TIER I CHIEFS OF POLICE

1. Implications for VIPR Effectiveness for Tier I

Policy implications associated with the overall effectiveness of the VIPR program for Tier I agencies are evident from the interview data. While all three Tier I mass transit agencies reported some participation in the VIPR program, from a high frequency of one operation a week to a low of three to four times a year, the data calls into question how effective the VIPR program really is for Tier I mass transit agencies. For example, one Tier I chief does not use VIPR operations in the traditional sense but does use VIPR operations for passenger screening. Two chiefs reported the desire to maintain good relations with the TSA in performing VIPR operations. One Tier I chief even questioned the overall effectiveness of the program, and another questioned the FAMS' authority to perform their operations in the local setting.

2. Implications for Increasing LEOs

Policy implications associated with increasing the number of LEOs are also evident from the interview data. If the VIPR program is not as effective for Tier I mass transit agencies as it could or should be, would the resources be better directed to another program? Can the resources be better directed by funding LEO positions for mass transit agencies that do not have the resources to perform high visibility patrols on an unpredictable basis for their own mass transit agencies?

H. INTERVIEWS OF CHIEFS OF POLICE FROM TIER II MASS TRANSIT AGENCIES

Of the seven Chiefs of Police of Tier II transit agencies who were interviewed, all were asked the following question:

> *Please describe how your mass transit agency applies the TSA's Visible Intermodal Prevention and Response team program (VIPR) to your agency's Security efforts. What is good about the program, and how can it be improved? Follow up questions were asked as appropriate for clarification and/or expansion of the Chief's response. Responses were*

grouped into five broad categories: Application of the program to their own agencies; Positive aspects of the program; Program criticisms; and Recommendations for overall program improvement.

First, on the broad question of how the agency applies the program to its own security efforts, all seven Chiefs of Police of Tier II transit agencies reported participation by their agency in the VIPR program. The range of participation started with a high frequency of one VIPR operation a week to a low frequency of 4 to 5 VIPR operations a year. Four chiefs reported one to two VIPR operations a month. One chief reported that his agency participated in approximately three VIPR operations a month.

One Tier II chief noted that national intelligence reports have identified mass transit as a high profile target for terrorism. In the past year, his mass transit agency has been involved in three incidences when persons listed on TSA's "watch list" were located on his mass transit system. Some of these individuals were found to also be engaged in suspicious behavior while on the system. Based on this personal firsthand experience, the chief considers VIPR operations to be an important element of his mass transit agency's security strategy. On his system, VIPR operations are conducted on average once a week when TSA personnel are teamed with three to five of his transit police officers. In addition to VIPR operations, his department expends six hours of overtime daily to enable officers to perform saturation patrols during morning and evening rush hours.

Several chiefs noted that VIPR operations are conducted mostly to coincide with holidays or special events during surges in ridership. VIPR venues include bus terminals, bus parking at major league stadiums during sporting events or major concerts, and at transit centers.

Concerning positive aspects of the VIPR operations, one chief characterized the program as fantastic. He considers the random nature of the program to be a deterrent and the additional TSA resources to be a force multiplier.

Another Tier II chief noted that VIPR operations on his mass transit systems started out poorly; however, since the TSA reached the understanding that it could not

conduct VIPR operations independently without the transit agency's participation, VIPR operations have become very positive. To overcome the initial problems, meetings were held with the Special Agent in Charge of the Federal Air Marshal's Service and the FAMs were partnered with transit police officers. VIPR operations are now conducted one or more times per month on the mass transit agency's schedule rather than at the convenience of the TSA. FAM resources for VIPR operations are also on the increase. The chief's mass transit agency has no plans to conduct passenger screening as a part of VIPR operations because the chief does not consider rail platforms to be conducive for effective screening procedures.

Another Tier II chief reported that the VIPR operations have been a positive influence on the security of his mass transit agency. The chief and the members of his department have developed an excellent relationship with the FAMs. Monthly meetings are held for planning and coordination of VIPR operations.

One other Tier II chief expressed pleasure with VIPR operations at his mass transit agency. He considers the VIPR program to be a very valuable security service. VIPR operations are conducted on average about one to two times a month and have been especially effective in increasing security during special events. The TSA has done a very good job of coordinating the scheduling of VIPR operations with his mass transit agency.

As far as criticisms of the program, a chief reported that in his opinion, TSA's VIPR program resources are spread too thin with insufficient resources to cover such a broad geographic area.

Another chief noted that his agency's first VIPR operation was conducted in 2007 using screening inspectors, FAMs, BDOs, TSIs and transit police. The passenger screening did not work well. The screeners were not experienced in working in a mass transit environment and seemed to be uneasy in the new environment. The screening personnel had no direct supervision on site. The TSIs did not have supervision on scene either, nor communications capabilities. The VIPR operations were thereafter modified to exclude passenger screening. Significant training and orientation was conducted by

the mass transit agency's personnel to familiarize the TSA with the mass transit environment. As a result of that investment, the FAMs and BDOs have developed into the TSA's most effective assets for VIPR operations. The chief considers the TSIs who participate in VIPR operations to be "tag alongs" who do not provide much added value.

At another mass transit agency TSIs have more influence over VIPR operations than the FAMS. The TSI supervisor schedules all VIPR operations, in coordination with the mass transit agency's Chief of Police. Although six FAMS are designated for mass transit, three are still assigned to the aviation sector. As a result, FAMS are not available to participate in all VIPR operations. The chief noted that some communications problems still exist between TSA headquarters and the field. Surge requests have been made from TSA Mass Transit Division, Washington, D.C., and neither the FAMS nor the TSIs have been aware of the requests. The TSA's EDCTs are more than likely not available to participate in VIPR operations.

A chief pointed out that, although VIPR operations are force multipliers, because of the need to team transit police with FAMs they also come at a financial expense to transit agencies with limited resources, which must also work within operating budgets. The TSGP generally does not allow funding for transit police agencies to pay for overtime to support VIPR operations. The chief noted that his agency has been unable to apply grant funding to support the overtime payments for transit police personnel since 2005.

Another chief advised that VIPR operations are manpower intensive from the mass transit agency's perspective. The chief has many special events to address and his resources need to be directed to those particular events as opposed to the random patrols, which VIPR operations tend to focus on. He advised that his agency's security patrols need a focus and a purpose. His view is that TSA's VIPR operations are in essence created and designed to meet Congressional mandates. He noted that the FAMS were pulled away from security for mass transit and redirected to aviation after one of the more recent attempted terror plots involving an aircraft. Therefore, they cannot be counted on for mass transit when the aviation threat level increases.

A chief noted that he appreciates the VIPR's security value provided by visible unpredictable deterrence and prevention of terrorism, but is concerned over the perception of excessive and inefficient use of security resources. He has observed the TSA to sometimes over apply security resources at rail stations and platforms. On one occasion, he counted 17 officers on a rail platform, which he found to be excessive. The TSA showed an understanding of the issues when this problem was explained to them, but they need to continue to work on establishing an appropriate balance of resources during VIPR operations. As far as recommendations for improving the VIPR program, a chief recommended that TSA increase VIPR operations beyond once a week. The chief would like to see a daily presence.

A second chief noted that VIPR operations on his mass transit system received a large boost in security this year when his agency was approved by the TSA for a grant to fund an anti-terrorism team operations package. The OPack included funding for four police officers for three years, training and equipment to support the team. The anti-terrorism team is used to support VIPR operations. The chief believes that more funding for these teams would be of great benefit. The chief also recommends that the TSA improve command and control procedures and communications capabilities of VIPR teams particularly with regard to TSIs.

A chief recommended that the TSA increase the number of FAMS available to VIPR operations on mass transit. He also recommended improvement in coordination between TSA HQ Mass Transit Division and the FAMS and TSI units assigned to mass transit and improved communications capabilities for VIPR team participants. He also recommended an increased deployment of EDCTs in VIPR operations.

Another chief recommended that TSGP funds be made available to mass transit agencies to pay for overtime funding of transit police in support of VIPR operations. He recommends that mass transit agencies with small transit police agencies be authorized to apply for anti-terrorism teams, which could be used to participate in VIPR operations, and that VIPR operations are increased to optimally once a week. The chief also would

like to see an increase of VIPR operations to address the security of bus operations. Another chief's only recommendation for improvement in the VIPR program was that more VIPR operations be conducted.

A chief recommended that if TSI's are going to continue to participate in VIPR operations that they need to be armed law enforcement officers in order to protect themselves. There need to be more dedicated FAM resources. VIPR operations need to be better coordinated with mass transit agencies. VIPRs operations need to be focused and structured. More advanced planning needs to be conducted to insure the best application of time and resources, rather than the haphazard approach that is taken. Threats and targets need to be considered rather than just choosing dates, although he appreciated the value that randomness of scheduling brings to VIPR operations.

A chief recommended that if TSIs participate in VIPR operations that they are provided with a certain level of training, and that VIPR operations be scaled to fit circumstances. He also would like to see VIPR operations be more available than the one to two times per month, which is presently available. He noted that he understands the personnel limitations that the TSA faces.

I. POLICY IMPLICATIONS ATTRIBUTABLE TO INTERVIEWS OF TIER II CHIEFS OF POLICE

1. Implications for VIPR Effectiveness for Tier II

Policy implications associated with the overall effectiveness of the VIPR program for Tier II agencies are evident from the interview data, even though VIPR operations have resulted in documented success. While all Tier II chiefs reported participation in VIPR operations, the limited range of frequency of VIPRs from one operation a week to four or five a year, calls their overall effectiveness into question. Tier II chiefs consistently comment that they would prefer more VIPR operations and the frequency of the operations is spread too thin, with VIPR operations' timing often focused on special events and holidays. Tier II chiefs are also concerned that VIPR operations cannot be

relied upon during periods of increased threat levels if FAMs have dual responsibilities in aviation and mass transit, because the resources will be pulled away from mass transit security to support aviation security.

Administrative problems also contribute toward diminished effectiveness. VIPR operations add expenses to Tier II mass transit agencies that cannot be recovered because transit agencies must assign personnel to VIPR operations, and TSA does not reimburse for these costs.

Operational problems also contribute toward diminished effectiveness. There is a continued need to work out coordination and communications problems between mass transit agencies and the TSA. There is also a concern that TSIs do not add value to VIPR operations, and that they need additional training and should be armed if they are to continue to participate in these operations.

2. Implications for Increasing LEOs

Policy implications associated with increasing the number of LEOs are also evident from the interview data, and are the same as those raised from the interviews of Tier I chiefs. If the VIPR program is not as effective for Tier II mass transit agencies as it could or should be, would the resources be better directed to another program? Can the resources be better directed by funding LEO positions for mass transit agencies that do not have the resources to perform high visibility patrols on an unpredictable basis for their own mass transit agencies? If VIPR program funding was re-directed to fund the hiring of LEOs by mass transit agencies could the frequency of these types of patrols be increased, and could the administrative and operational concerns be eliminated?

A Tier II mass transit agency received a large boost in security this year when his agency was approved by the TSA for a grant to fund an anti-terrorism team operations package. This was a supplemental grant that was paid for through the *American Recovery and Re-Investment Act*. The operations package included funding for four police officers for three years, training and equipment to support the ATT. The anti-terrorism team is used to support VIPR operations.

3. Implications for Increasing EDCTs

The interview data also suggested that more EDCTs would also improve VIPR operations.

J. CHAPTER SUMMARY, DISCUSSION AND CONCLUSIONS

VIPR teams for mass transit were created in response to the 2004 Madrid terrorist attack on mass transit and were formally introduced for mass transit in 2005 (GAO, 2009c, p. 4). The VIPR program was authorized by the *9/11 Commission Act* of 2007 for the purpose of providing a random, unannounced, high visibility presence on mass transit, and passenger rail (IRCA). The act authorized the TSA to decide when and where to deploy VIPR teams and for mass transit agencies to be consulted (IRCA). The VIPR program got off to a rocky start in 2007 when TSA HQ deployed teams nationwide in response to overseas terrorist activity, with inadequate local coordination OIG, 2008, pp. 27, 28). Strained relations with local authorities resulted OIG, 2008, pp. 27, 28). Complaints from local authorities included overall lack of coordination, inadequate communications capabilities between the TSA and local law enforcement, and friction with police unions over taking local jobs (OIG, 2008, p. 46). A review of after action reports of VIPR activity in 2009 revealed continuing concerns over the lack of communications capabilities between the TSA, VIPR members, and local law enforcement (GAO, 2009b, p. 46). Mass transit agencies were split over the perceived value of the VIPR operations, and some concerns were raised that some TSA members of VIPR teams were unarmed (GAO, 2009b, pp. 45, 46). VIPR operations have steadily been increasing (OIG, 2010, p. 19).

VIPR operations are clearly a more valuable security resource to Tier II mass transit agencies than Tier I mass transit agencies. This is likely due to the fact that Tier I mass transit agencies have more security resources at their disposal than Tier II mass transit agencies. Tier II mass transit agencies would like to see more VIPR operations, recognizing that these operations cannot always be relied upon, when security needs arise elsewhere like in the aviation sector. VIPR operations add administrative costs and burdens to mass transit agencies, and they continue to have operational coordination and

communications problems. TSIs add little value to VIPR operations and require more training. When a Tier II mass transit agency was able to acquire an anti terrorism team through an ATT OPack it was able to increase its agency's LEOs by four positions for three years. The ATT OPack contributed significantly to VIPR operations. An increase in EDCTs would also improve VIPR effectiveness.

Combined, the data calls into question the overall effectiveness of the VIPR program, particularly for tier I agencies, and raises the question as to whether mass transit agencies could perform high visibility patrols on an unpredictable basis more effectively if they had the resources to do the patrols themselves. This then raises the question that if VIPR program resources for mass transit was re-programmed to fund LEOs for mass transit agencies to perform these high visibility patrols, could they be performed more frequently, with less administrative and operational problems than are now associated with the VIPR program?

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VII. POLICY OPTIONS ANALYSIS

A. INTRODUCTION

This chapter will evaluate policy options to accomplish two broad goals.

1. Increasing LEOs for Tier II mass transit agencies
2. Increasing EDCTs for Tier II mass transit agencies

The chapter will be divided into two main sections, goal one for increasing LEOs for Tier II mass transit agencies; and goal two for increasing EDCTs for Tier II mass transit agencies.

For the analysis of goal one, three policy options will be enumerated, followed by detailed descriptions of each policy option. The policy options will then be evaluated on the basis of four evaluative criteria, effectiveness, cost, level of effort, and political acceptability.

Effectiveness will be evaluated in relation to the increase in the number of LEOs that can be produced based on a given budget. The budget figure that was chosen for comparison was $5.46 million, which was 20 percent of the $27.3 million that was budgeted for Tier II mass transit agencies in the FY ’10 TSGP (DHS, 2009b, p. 7).

Cost will be evaluated in relation to the estimated monetary expense associated with implementing the recommended changes. Cost will be calculated by dividing the budgeted amount used for comparison purposes by the number of LEOs produced.

Level of effort will be evaluated in relation to whether energy or exertion is required to implement the recommended changes. This will be estimated on the basis of two factors. First, will the policy option work within the existing legal framework, or will it require new legislation? Second, will the policy option add increased administrative burden on the Tier II mass transit agency? A binary code will be used to calculate the factors with one used to indicate change in legislation is required or administrative burden is increased, zero applied if no new legislation is required, and or the administrative burden is not increased.

Lastly, political acceptability will be evaluated in relation to the acceptability of any proposed options to the mass transit industry, the TSA, and the Congress. Political acceptability or not, on the part of the mass transit industry will be estimated based on the data from the interviews of Chiefs of Police of mass transit agencies. Political acceptability or not, on the part of the TSA will be estimated on the basis of whether the policy option is or is not a part of the existing policy. If so, it will be estimated as politically acceptable. If not, it will be estimated as not politically acceptable. Political acceptability or not, on the part of the Congress will be estimated on the basis of whether or not the *9/11 Commission Act* prohibits the policy option. A binary code will be used to calculate the factors with one used to indicate political acceptability and zero to indicate not politically acceptable.

The analysis will be summarized using a policy options matrix to record and contrast the analysis results.

B. GOAL 1: INCREASE LEOS FOR TIER II MASS TRANSIT AGENCIES

The three policy options for analysis under goal one are:

1. The exception to the status quo; OPacks to fund LEOs that are available only to Tier I mass transit agencies, are made available to Tier II mass transit agencies with limitations, as exceptions to the status quo like the FY 09 American Recovery and Re-investment Act (ARRA) supplemental funding to the TSGP. (DHS, 2009a)
2. Authorize Tier II mass transit agencies to apply for the ATT OPacks that are available to Tier I mass transit agencies.
3. Create a new program administered by the TSA within the TSGP to fund LEOs for Tier II mass transit agencies within the TSGP

1. Description of the Options

a. Policy Option 1: The Exception to the Status Quo

Policy option one is for TSA to make an occasional exception to the status quo in regard to its funding for law enforcement positions. Presently, only the TSGP has a provision that allows for the funding of law enforcement officers (LEOs) for mass

transit and only available to Tier I mass transit agencies, through operational packages (OPacks). An exception was made under the FY 09 TSGP grant cycle, and an OPack was available to fund the hiring of LEOs, specifically referred to as an Anti-Terrorism Teams (ATT) OPack (DHS, 2009a). The ATT OPack is described as follows, along with restrictions and requirements:

The ATT OPack consists of funding for four individuals, all of whom can be LEOs, including two overt elements such as uniformed officers, a canine team, or mobile screener, plus two discreet observer elements. The performance period is 36 months. The funding for the ATT OPack is $500,000 per team, per year (DHS, 2009b). The total funding for the 36-month performance period is $1,500,000 per team. The grant funding covers salary and fringe benefits for the personnel, training and certification, equipment costs, purchase and training of the canine and canine expenses (DHS, 2009b).

Restrictions and requirements under option one include the following: OPacks are limited to eligible Tier I mass transit agencies that have a dedicated transit security/police force, a transit security operations dispatch center, and a daily unlinked ridership of 200,000 passengers or greater. Recipient mass transit agencies must also show how the agency proposes to implement capital projects that will sustain the operational activities and/or demonstrate how the agency will sustain the operational investments after the grant funding has been expended. OPacks are also available to law enforcement agencies as sub-recipients that serve as the primary security provider for mass transit agencies in Tier I regions, provided those sub-grantees use the funding to support transit-related security activities and not other departmental operations. Any sub-recipient also must approve the mass transit agency's security plan (DHS, 2009b).

Other restrictions require that OPack funds apply exclusively to counterterrorism activities, and the funds may not be used to supplant existing agency programs already supported by the mass transit agency. OPacks may only be used for new capabilities and or programs and only on a full time basis for their intended purpose (DHS, 2009b).

Other general eligibility requirements apply, including that the mass transit agency has undergone a security assessment by DHS, or developed a security plan, both within the past three years, and that grant funds be used to address items in the security assessment or the security plan. Compliance with National Incident Management System is also a requirement as it is for any recipient of federal preparedness assistance (DHS, 2009b).

b. Policy Option 2: Authorize Tier II Mass Transit Agencies to Apply For ATT OPacks Available to Tier I Mass Transit Agencies

Policy option two is for the TSA to authorize Tier II mass transit agencies to apply for the ATT OPacks that are available to Tier I mass transit agencies. All of the restrictions and requirements that apply to Tier I mass transit agencies will apply to Tier II mass transit agencies, except that daily unlinked ridership of 200,000 passengers will not be required.

The ATT OPack consists of funding for four individuals, all of whom can be LEOs, including two overt elements such as uniformed officers, a canine team, or mobile screener, plus two discreet observer elements. The performance period is 36 months. The funding for the ATT OPack is $500,000 per team, per year. The total funding for the 36 month performance period is $1,500,000 per team. The grant funding covers salary and fringe benefits for the personnel, training and certification, equipment costs, and purchase and training of the canine and canine expenses (DHS, 2009b).

Restrictions and requirements under option one include the following: OPacks are limited to eligible Tier I mass transit agencies that have a dedicated transit security/police force, a transit security operations dispatch center, and a daily unlinked ridership of 200,000 passengers or greater. Recipient mass transit agencies must also show how the agency proposes to implement capital projects that will sustain the operational activities, and/or demonstrate how the agency will sustain the operational investments after the grant funding has been expended. OPacks are also available to law enforcement agencies as sub recipients that serve as the primary security provider for

mass transit agencies in Tier I regions, provided those sub-grantees use the funding to support transit-related security activities and not other departmental operations. Any sub-recipient also must approve the mass transit agency's security plan (DHS, 2009b).

Other restrictions require that OPack funds apply exclusively to counterterrorism activities and the funds may not be used to supplant existing agency programs already supported by the mass transit agency. OPacks may only be used for new capabilities and or programs and only on a full time basis for their intended purpose (DHS, 2009b).

Other general eligibility requirements apply, including that the mass transit agency has undergone a security assessment by DHS, or developed a security plan, both within the past three years, and that grant funds be used to address items in the security assessment or the security plan. Compliance with National Incident Management System is also a requirement as it is for any recipient of federal preparedness assistance (DHS, 2009b).

c. Policy Option 3: Create a New Program Administered by the TSA Within the TSGP to Fund LEOs for Tier II Mass Transit Agencies

Policy Option Three is to create a new program administered by the TSA within the TSGP to fund LEOs for Tier II mass transit agencies. This option would focus grant funds on operational costs rather than infrastructure security improvement costs and equipment costs, which are the focus of TSGP. This new program would be modeled after a grant program the U.S. Attorney General created and the DOJ has administered since 1994 known as the Office of Community Oriented Policing Services (COPS) grant program (COPS, 2011). This new grant program proposed under option three will fund 100 percent of the salary, benefits, and training for entry level LEO positions. Like options one and two, the performance period is 36 months.

Restrictions and requirements under option three mirror those of options one and two, and include the following: option three will be limited to eligible Tier II mass transit agencies that have a dedicated transit security/police force, a transit security

operations dispatch center. Recipient mass transit agencies must also show how the agency proposes to implement capital projects that will sustain the operational activities, and/or demonstrate how the agency will sustain the operational investments after the grant funding has been expended. This option will also be available to law enforcement agencies as sub-recipients that serve as the primary security provider for mass transit agencies in Tier II regions, provided those sub-grantees use the funding to support transit-related security activities and not other departmental operations. Any sub-recipient also must approve the mass transit agency's security plan.

Other restrictions will require that option three funds apply exclusively to counterterrorism activities, and the funds may not be used to supplant existing agency programs already supported by the mass transit agency. Option three funds may only be used for new capabilities and or programs and only on a full time basis for their intended purpose.

Other general eligibility requirements apply, including that the mass transit agency has undergone a security assessment by DHS, or developed a security plan, both within the past three years, and that grant funds be used to address items in the security assessment or the security plan. Compliance with National Incident Management System is also a requirement as it is for any recipient of Federal preparedness assistance.

2. Evaluation of Policy Options Analysis for Increasing LEOs for Tier II Mass Transit Agencies

The analysis of these policy options will be based on the criteria described in the methodology section of Chapter I. As a reminder, effectiveness here refers to the increase in the number of LEOs

a. Policy Option 1: The Exception to the Status Quo

(1) Effectiveness**.** The exception to the status quo is an ineffective option for increasing the number of LEOs for Tier II mass transit agencies. Presently, only the TSGP has a provision that allows for the funding of law enforcement officers

(LEOs) for mass transit, and that provision is only available to Tier I mass transit agencies, through OPacks. There has been an exception made in the past, which has enabled Tier II mass transit agencies to apply for LEOs through OPacks. This exception was in FY 09 under the ARRA supplemental funding (DHS, 2009a); however, even with that exception, Tier II mass transit agencies were required to have law enforcement staffing levels of at least 100 sworn officers (DHS, 2009a). Since this option cannot be relied on, it is an ineffective option for increasing the number of LEOs for Tier II mass transit agencies. This option is likely to result in no increase in LEOs.

(2) Cost. The exception to the status quo has no to low cost associated with it since this option is only available to Tier II mass transit agencies under exceptional circumstances. Even when the option was available, it was on a limited basis since Tier II mass transit agencies were required to have law enforcement staffing levels of at least 100 sworn officers. Zero costs are estimated and will be applied to this cost.

(3) Level of Effort. The exception to the status quo has no to low levels of effort associated with it, since it would require no new statutory authority and is not likely to increase the administrative burden on Tier II mass transit agencies.

(4) Political Acceptability. The exception to the status quo would likely be politically acceptable to two of the three entities considered, the TSA, since it is part of an existing program, and the Congress, since it falls within the statutory limitations of the *9/11 Commission Act*. The option is unlikely to be politically acceptable to Tier II mass transit agencies based on the interviews of Chiefs of Police.

b. Policy Option 2: Authorize Tier II Mass Transit Agencies to Apply for ATT OPacks Available to Tier I Mass Transit Agencies

(1) Effectiveness. Given that a $27.3 million budget that was available to Tier II mass transit agencies in the FY ’10 TSGP grant cycle; and 20 percent of that budget could be used for operational costs (DHS, 2009b); then $5.46 million was available for OPacks. Therefore, 3.6 ATT OPacks, consisting of four LEOs each, or a total of 14.4 LEOs, could be procured within that budgeted amount.

(2) Cost. The cost per LEO is computed by dividing the $5.46 million budgeted amount, by the 14.4 LEOs that could be procured, for an average cost of $379,166 per LEO for the three year grant life.

(3) Level of effort. Authorizing Tier II mass transit agencies to apply for OPacks available to Tier I mass transit agencies would require no new statutory authority, but would increase the administrative burden on Tier II mass transit agencies since they would be required to hire, and train the LEO's and administer the grant.

(4) Political Acceptability. Authorizing Tier II mass transit agencies to apply for OPacks available to Tier I mass transit agencies would likely be acceptable to two of the three entities considered, the Tier II mass transit agencies, since they would be the recipients of the LEOs, and the Congress since the option is not prohibited by the *9/11 Commission Act*. However since it is not already part of the grant guidance it is likely to be politically unacceptable to the TSA.

c. Policy Option 3: Create a New Program Administered by the TSA Within the TSGP to Fund LEOs for Tier II Mass Transit Agencies

(1) Effectiveness. Given that $27.3 million budget was available to Tier II mass transit agencies in the FY '10 TSGP grant cycle, and 20 percent of that budget could be used for operational costs (DHS, 2009b), then $5.46 million was available and will be used as the basis for comparison of this option.

Given that a $298 million budget was available in FY 10 for the U.S. DOJ's COPS grant cycle, and that 1,388 LEOs were hired (DOJ, 2010d), then the average cost per LEO under the COPS grant program can be computed by dividing the budgeted amount of $298 million by 1,388 (DOJ, 2010d); resulting in an average cost of $214,697 per officer for the COPS program.

Given that $5.46 million was available to Tier II mass transit agencies in the FY '10 TSGP grant cycle for operational costs (DHS, 2009b), this figure will be used for comparison purposes and divided by the average cost of a LEO under the U.S. DOJ COPS program, which is $214,697 per officer. This figure will be used for

comparison purposes and divided by the average cost of a LEO under the U.S. DOJ COPS program, which is $214,697 per officer. Therefore, $5.46 million divided by $214,697, results in the equivalent of 25.43 LEOs if a grant program similar to the U.S. DOJ COPS program was used.

(2) Cost. For comparison purposes, the cost per LEO is computed by dividing the $5.46 million budgeted amount, by 25.43 LEOs, resulting in an average cost of $214,697 per LEO for the three year grant life.

(3) Level of Effort. Creating a new program administered by the TSA within the TSGP to fund LEOs for Tier II mass transit agencies would require new statutory authority. The new program would also increase the administrative burden on Tier II mass transit agencies since they would be required to hire and train the LEO's as well as administer the grant.

(4) Political Acceptability. Creating a new program administered by the TSA within the TSGP to fund LEOs for Tier II mass transit agencies would likely be acceptable to one of the three entities considered, namely the Tier II mass transit agencies, since they would be the recipients of the LEOs, and the interviews of Chiefs of Police support this option. However since it is not already part of the grant guidance this option is likely to be politically unacceptable to the TSA. Nor is the policy option within the authority of the *9/11 Commission Act* and therefore judged as not politically acceptable to the Congress.

3. Summary

The following policy options matrix captures the results of the analysis for easy reference (Table 1).

Table 1. Policy Options Matrix for LEOs

Policy Option	Effectiveness	Cost	Level of Effort	Political Acceptability
1	0	0	L=0, A=0	MT=0, TSA=0, C=0

Policy Option	Effectiveness	Cost	Level of Effort	Political Acceptability
2	14.40 LEOs	$379,166 / LEO	L=0, A=1	MT=1, TSA=0, C=1
3	25.43 LEOs	$214,697 / LEO	L=1, A=1	MT=1, TSA=0, C=0

Policy option one, which is the exception to the status quo, is the least desirable option. It is ineffective because the option is available to Tier II mass transit agencies only occasionally (DHS, 2009a), has required Tier II mass transit agencies to have law enforcement staffing levels of at least 100 sworn officers (DHS, 2009a), and, therefore, is unlikely to result in an increase in LEOs for Tier II mass transit agencies.

Policy option two, which would authorize Tier II mass transit agencies to apply for ATT OPacks that are available only to Tier I mass transit agencies (DHS, 2009b), is the second best option. Given the budget that was available to Tier II mass transit agencies in FY 10, this policy option would result in an increase of 14.40 LEO positions for Tier II mass transit agencies, which is less than the number of LEOs for policy option three. The average cost per LEO would be $379,166, which is higher than the average cost per LEO under policy option number three. Policy option two does not require any new statutory authority, but it does increase the administrative burden on Tier II mass transit agencies, since they would be required to hire and train the LEOs and administer the grant. Policy option two would likely be acceptable to Tier II mass transit agencies since they would be able to apply for the ATT OPacks and benefit from the increase in the number of LEOs for their mass transit agencies, as supported by the interviews of Chiefs of Police. This policy option was considered likely not acceptable to the TSA, otherwise it would have already been available in the grant guidance. Since the policy option is not prohibited by the *9/11 Commission Act*, and would not require legislation, it was judged as acceptable to Congress.

Policy option three, which would create a new program, to be administered by the TSA within the TSGP to fund LEOs for Tier II mass transit agencies is considered to be the best and recommended policy option. Given the budget that was available to Tier II mass transit agencies in FY 10, this policy option would result in an increase of 25.43 LEO positions for Tier II mass transit agencies, which is more than the number of LEOs

for policy option two. The average cost per LEO would be $214,697, which is less than the average cost per LEO under policy option number two. Unlike policy option two, policy option three would essentially be a new program and would therefore require new statutory authority. Like policy option two, policy option three would increase the administrative burden on Tier II mass transit agencies, since they would be required to hire and train the LEOs and administer the grant. Like policy option two, policy option three would likely be acceptable to Tier II mass transit agencies since they would be able to apply for the ATT OPacks and benefit from the increase in the number of LEOs for their mass transit agencies, as supported by the interviews of Chiefs of Police. Policy option three is considered likely not acceptable to the TSA, otherwise it too would have already been included in the grant guidance. Since the policy option is not prohibited by the *9/11 Commission Act*, and would require legislation, it was judged not to be acceptable to Congress. Although this policy option requires statutory authority, the significant increase in the number of LEOs over the other policy options, and the significantly less cost per LEO in comparison to policy option two make this option the best and recommended option.

C. GOAL 2: INCREASE EDCTS FOR TIER II MASS TRANSIT AGENCIES

For the analysis of goal two, three policy options will be enumerated, followed by detailed descriptions of each policy option. The policy options will then be evaluated on the basis of four evaluative criteria, effectiveness, cost, level of effort, and political acceptability.

Effectiveness will be evaluated in relation to the increase in the number of EDCTs that can be produced based on a given budget. The budget figure that was chosen for comparison was $5.46 million, which was 20 percent of the $27.3 million that was budgeted for Tier II mass transit agencies in the FY ’10 TSGP (DHS, 2009b).

Cost will be evaluated in relation to the estimated monetary expense associated with implementing the recommended changes. Cost will be calculated by dividing the budgeted amount used for comparison purposes by the number of EDCTs produced.

Level of effort will be evaluated in relation to whether energy or exertion is required to implement the recommended changes. This will be estimated on the basis of two factors. First, will the policy option work within the existing legal framework, or will it require new legislation? Second, will the policy option add increased administrative burden on the Tier II mass transit agency? A binary code will be used to calculate the factors with one used to indicate change in legislation is required or administrative burden is increased, and zero applied if no new legislation is required and or the administrative burden is not increased.

Lastly, political acceptability will be evaluated in relation to the acceptability of any proposed options to the mass transit industry, the TSA, and the Congress. Political acceptability or not, on the part of the mass transit industry will be estimated based on the data from the interviews of Chiefs of Police of mass transit agencies. Political acceptability or not, on the part of the TSA will be estimated on the basis of whether the policy option is or is not a part of the existing policy. If so, it will be estimated as politically acceptable. If not, it will be estimated as not politically acceptable. Political acceptability or not, on the part of the Congress will be estimated on the basis of whether or not the *9/11 Commission Act* prohibits the policy option. A binary code will be used to calculate the factors with one used to indicate political acceptability and zero to indicate not politically acceptable.

The analysis will be summarized using a policy options matrix to record and contrast the analysis results.

The three policy options for analysis are:

1. Maintain the status quo by tier II mass transit agencies continuing to acquire Explosives Detection Canine Teams (EDCTs) through the National Explosives Detection Canine Team Program (NEDCTP).
2. Authorize Tier II mass transit agencies to apply for the ATT OPacks that are available to Tier I mass transit agencies through the TSGP.
3. Modify the NEDCTP to authorize funding for Tier II mass transit agencies to procure canines and training to TSA standards

1. Description of the Options

a. Policy Option 1 - Maintain the Status Quo

Policy option one is for the TSA to maintain the Status Quo. The only current way to provide explosives detection canines for Tier II mass transit agencies is through the NEDCTP, and that is why it is presented as an option. Under the NEDCTP, each canine team is composed of one dog provided by the TSA and one handler employed by the local law enforcement or transportation authority that enters into a voluntary agreement with the NEDCTP (HR, 2005, pp. 1–3). Under the agreement the local agency agrees to utilize TSA-certified canine teams at least 80 percent of the time in the transportation environment (HR, 2005, pp. 1–3). The local agency agrees to participate in the program for five years and to maintain a minimum of three TSA-certified canine teams for incident response for a minimum of three years for each team (HR, 2005, pp. 1–3). The TSA provides the dog, training of the handler, explosives training aids, and technical assistance at no cost to the participating agency (HR, 2005, pp. 1–3). In addition, monetary reimbursement is provided to the local jurisdiction, in the amount of $50,000 (GAO, 2008) per canine team per year to help defray costs such as kennel facilities, transport vehicles, and veterinary care. The dog handler, who is provided by the agency, is sent to Texas where the training is conducted (HR, 2005, pp. 1–3).

b. Policy Option 2: Authorize Tier II Mass Transit Agencies to Apply for EDCT OPacks Now Available Only to Tier I Mass Transit Agencies Through the TSGP

Policy option two is for the TSA to authorize Tier II mass transit agencies to apply for EDCT OPacks that are now available only to Tier I mass transit agencies through the TSGP (DHS, 2009b). All of the restrictions and requirements that apply to Tier I mass transit agencies will apply to Tier II mass transit agencies under option two, except that daily unlinked ridership of 200,000 passengers will not be required (DHS, 2009b).

The EDCT OPack is composed of one canine and one handler. The performance period for this grant is 36 months. The funding for the EDCT is $150,000 per team, per year. The total funding for the 36 month performance period is $450,000 per team. The grant funding covers salary and fringe benefits for the LEO, training and certification, equipment costs, purchase and training of the canine and canine expenses (DHS, 2009b).

Restrictions and requirements under option two include the following: EDCT OPacks are limited to eligible Tier II mass transit agencies that have a dedicated transit security / police force, a transit security operations dispatch center (DHS, 2009b). Recipient mass transit agencies must also show how the agency proposes to implement capital projects that will sustain the operational activities, and/or demonstrate how the agency will sustain the operational investments after the grant funding has been expended (DHS, 2009b). EDCT OPacks are also available to law enforcement agencies as sub recipients that serve as the primary security provider for mass transit agencies in Tier II regions, provided those sub-grantees use the funding to support transit-related security activities and not other departmental operations (DHS, 2009b).Any sub-recipient also must approve the mass transit agency's security plan (DHS, 2009b).

Other restrictions require that EDCT OPack funds apply exclusively to counterterrorism activities and the funds may not be used to supplant existing agency programs already supported by the mass transit agency (DHS, 2009b). EDCT OPacks may only be used for new capabilities and or programs and only on a full time basis for their intended purpose (DHS, 2009b).

Other general eligibility requirements apply, including: that the mass transit agency has undergone a security assessment by DHS or developed a security plan, both within the past three years, and that grant funds be used to address items in the security assessment or the security plan (DHS, 2009b). Compliance with National Incident Management System is also a requirement as it is for any recipient of Federal preparedness assistance (DHS, 2009b).

c. Policy Option 3: Modify the NEDCTP to Authorize Funding for Tier II Mass Transit Agencies to Procure Canines and Training to TSA Standards

Policy option three is proposed for consideration under the NEDCTP. This option is for mass transit agencies to procure canines on their own and to provide for their own training of the explosives detection canine teams. Under this alternative, the TSA will reimburse mass transit agencies for all start up costs, including canine, training, and equipment. The TSA will reserve the right to insure that the canine teams perform to a specified standard and meet all TSA certification requirements.

Procurement and training would be required to meet certification standards of qualified organizations such as the National Police Canine Association (NPCA), the United States Police Canine Association (USPCA), or the International Explosive Detection Dog Association (IEDDA), and be endorsed by the TSA under the standards of the TSA's NEDCTP. Additionally, mass transit agencies would be required to maintain certification, utilization, and training data to show compliance with guidelines set by the Scientific Working Group on Dog and Orthogonal Detection Guidelines (SWGDOG). Other requirements may be imposed such as guaranteeing a response capability by the mass transit agency on a 24 hours a day, seven days a week basis.

The TSA would have the option to adopt the trained EDCTs into the NEDCTP if all of the above requirements were met and if funding permits.

2. Evaluation of Policy Options Analysis for Increasing EDCTs for Tier II Mass Transit Agencies

The analysis of these policy options will be based on the critera described in the methodology section of Chapter I. As a reminder, effectiveness here refers to the increase in the number of EDCTs.

a. Policy Option 1: Maintain the Status Quo

(1) Effectiveness. Maintaining the status quo is an ineffective option for increasing the number of EDCTs for Tier II mass transit agencies. Presently, within the NEDCTP, there are estimated to be no more than 120 EDCTs for mass transit nationally. For the nation's 60 largest mass transit agencies, this averages out to only two EDCTs per mass transit agency. Of the three Tier I chiefs of mass transit agencies who were interviewed, among them, there were 16 EDCTs that were within the NEDCTP. Yet of the seven Tier II chiefs who were interviewed, there was not a single EDCT among them who was within the NEDCTP. Therefore, the effectiveness of this policy option is estimated to be low.

(2) Cost. The costs associated with developing EDCTs within the status quo of the NEDCTP are difficult to ascertain. Considering that the fixed and administrative costs of the NEDCTP are spread among the EDCTs that are produced for multiple modes of transportation including aviation, it is difficult to estimate the average cost to produce an EDCT for a Tier II mass transit agency. However, there are some estimates that can be made based on known data. For example, in 2005, two million dollars of a $22 million budget was set aside to produce three EDCTs each, for 10 mass transit agencies (HR, 2005, p. 3). Therefore, two million dollars can be divided by 30 for an average cost of $66,666 per EDCT in 2005. Then in June 2008, $3.5 million was budgeted for the production of 45 EDCTs for mass transit. An average cost to produce an EDCT can be estimated by dividing $3.5 million by 45, resulting in an average cost of $77,777 per EDCT in 2008.

The EDCTP also awards the mass transit agency that contracts with the NEDCTP $50,000 (GAO, 2008) per canine team per year to help defray costs such as kennel facilities, transport vehicles, and veterinary care. Therefore, for comparison purposes, the three year cost of an EDCT under this program can be estimated by taking the $77,777 cost of the dog, training of the handler, explosives

training aids, and technical assistance not adjusted for inflation, and adding the three annual payments, (3 x $50,000/yr = $150,000) and arriving at a three year total estimated cost of $227,777. ($77,777 + $150,000 = $227,777)

(3) Level of Effort. Maintaining the status quo has no new levels of effort associated with it, since it would require no new statutory authority and would have no significant increase the administrative burden on Tier II mass transit agencies.

(4) Political Acceptability. Maintaining the status quo would likely be politically acceptable to two of the three entities considered, the TSA, since it is their existing program, and the Congress, since it is authorized by the *9/11 Commission Act*. The policy option is likely not to be politically acceptable to Tier II mass transit agencies because it results in minimal EDCTs, and based on the results of the interviews of Chiefs of Police, the program is not satisfying their security needs.

b. Policy Option 2: Authorize Tier II Mass Transit Agencies to Apply for EDCT OPacks Now Available Only to Tier I Mass Transit Agencies Through the TSGP

(1) Effectiveness. Given that $27.3 million budget that was available to Tier II mass transit agencies in the FY ’10 TSGP grant cycle; and 20 percent of that budget could be used for operational costs (DHS, 2009b); then $5.46 million was available for OPacks. Since the three year budget for one EDCT OPack is $450,000 (DHS, 2009b), then 12.13 EDCT OPacks, can be funded consisting of 1 EDCT each. Therefore, a total of 12.13 EDCTs could be funded within the $5.46 million budget.

(2) Cost. The cost per EDCT is computed by dividing the $5.46 million budgeted amount, by the 12.13 EDCTs that could be funded, for an average cost of $450,000 per EDCT for the three year grant life.

(3) Level of effort. Authorizing Tier II mass transit agencies to apply for OPacks that are now available to Tier I mass transit agencies would require no new statutory authority, but it would increase the administrative burden on Tier II mass transit agencies. The administrative burden would increased because Tier II mass transit agencies would be required to procure the canine, train the team and administer the grant.

(4) Political Acceptability. Authorizing Tier II mass transit agencies to apply for OPacks that are now available to Tier I mass transit agencies would likely be acceptable to, the Tier II mass transit agencies, since they would be the recipients of the EDCTs, and the interview data indicates they would be interested in having EDCT OPacks made available to their agencies. However, this policy option is likely not politically acceptable to the TSA since it is not already part of the grant guidance. The policy option is judged to be politically acceptable to the Congress since the option is not prohibited by the *9/11 Commission Act*.

c. Policy Option 3: Modify the NEDCTP to Authorize Funding for Tier II Mass Transit Agencies to Procure Canines and Training to TSA Standards

(1) Effectiveness. Given that $27.3 million budget that was available to Tier II mass transit agencies in the FY 10 TSGP grant cycle; and 20 percent of that budget could be used for operational costs (DHS, 2009b); then $5.46 million was available and will be used as the basis for comparison of this option.

The estimated amount that the TSA would likely budget for this policy option can be deduced by examining the amount that the TSA budgeted for the cost of EDCT OPacks, and comparing it to the amount the TSA budgets to pay mass transit agencies on an annual basis under the NEDCTP. The EDCT OPack, composed of one canine and one handler, was budgeted at $150,000 per team, per year (DHS, 2009b). The grant funding covers salary and fringe benefits for the LEO, training and certification, equipment costs, purchase and training of the canine and canine expenses (DHS, 2009b). In contrast, Under the NEDCTP program The TSA provides the dog, training of the handler, explosives training aids, and technical assistance at no cost to the participating agency. Afterwards, monetary reimbursement is provided to the local jurisdiction, in the amount of $50,000 (GAO, 2008) per canine team per year to help defray costs such as kennel facilities, transport vehicles, and veterinary care. Therefore, it can be deduced that under policy option three, the TSA would pay the upfront cost of the dog, training of the dog and handler, explosives training aids and technical assistance, which we can reasonably estimate at a one-time cost of $100,000 plus an annual payment

of $50,000 (GAO, 2008) in the following years. Therefore, for comparison purposes the three year cost of the program can be estimated as $100,000 for year one, plus $50,000 (GAO, 2008) for year two, plus $50,000 (GAO, 2008) for year three; for a three year total of $200,000.

Given the $5.46 million that was available to Tier II mass transit agencies in the FY 10 TSGP grant cycle for operational costs (DHS, 2009b). This figure will be used for comparison purposes and divided by the average cost of an EDCT under policy option three, which is $200,000 per EDCT. Therefore, $5.46 million divided by $200,000 results in the equivalent of 27.3 EDCTs.

(2) Cost. The cost per EDCT is computed by dividing the $5.46 million budgeted amount, by the 27.3 EDCTs that could be funded, for an average cost of $200,000 per EDCT for the three year grant life.

(3) Level of Effort. Modifying the NEDCTP to authorize funding for Tier II mass transit agencies to procure canines and training to TSA standards would require no new statutory authority, but it would increase the administrative burden on Tier II mass transit agencies. The administrative burden would increase because Tier II mass transit agencies would be required to procure the canine, train the team, and administer the grant.

(4) Political Acceptability. Modifying the NEDCTP to authorize funding for Tier II mass transit agencies to procure canines and training to TSA standards would likely be acceptable to two of the three entities considered. The policy option would likely be politically acceptable to Tier II mass transit agencies since they would be the recipients of the EDCTs; interview data of Chiefs of Police supports this judgment. However since this policy option is not already part of their policy, then it is likely not politically acceptable to the TSA. The policy option is judged to be politically acceptable to the Congress since it is not prohibited by the *9/11 Commission Act*, and this direction is contained in the language of the *9/11 Commission Act* of 2007 (IRCA, 2007).

C. SUMMARY

The following policy options matrix captures the results of the analysis for easy reference (Table 2).

Table 2. Policy Options Matrix for EDCTs

Policy Option	Effectiveness	Cost	Level of Effort	Political Acceptability
1	Low	$227,777 / EDCT	L=0, A=0	MT=0, TSA=1, C=1
2	12.13 EDCTs	$450,000 / EDCT	L=0, A=1	MT=1, TSA=0, C=1
3	27.3 EDCTs	$200,000 / EDCT	L=0, A=1	MT=1, TSA=0, C=1

Policy option one, maintaining the status quo, is the least desirable option for Tier II mass transit agencies because of its lack of effectiveness. The status quo results in low numbers of EDCTs and particularly few for Tier II mass transit agencies. As previously indicated, only an estimated 100 to 120 EDCTs have been produced thus far for mass transit agencies. This is an average of only two EDCTs for each of the nations 60 largest mass transit agencies, which is far less than needed considering the vastness in size of mass transit systems and their 24 hour per day, seven day a week basis of operations. Furthermore, not one of the seven Chiefs of Police of Tier II mass transit agencies who were interviewed had received an EDCT through the NEDCTP. Interestingly, for the NEDCTP, the cost to produce and maintain an EDCT for a mass transit agency for three years is estimated to be somewhat higher than the three-year cost for a mass transit agency to procure and train the EDCT on its own.

Policy option two, which would authorize Tier II mass transit agencies to apply for EDCT OPacks that are available only to Tier I mass transit agencies, (DHS, 2009b) is the second best option. Given the budget that was available to Tier II mass transit agencies in FY 10, this policy option would result in an increase of 12.13 EDCT positions for Tier II mass transit agencies, which is less than the number of EDCTs for policy option three. The average cost per EDCT would be $450,000, which is higher

than the average cost per EDCT under policy option number three. Policy option two does not require any new statutory authority, but does increase the administrative burden on Tier II mass transit agencies, since they would be required to procure the canines, train the canines and handlers, and administer the grant. Policy option two would likely be acceptable to Tier II mass transit agencies since they would be able to apply for the EDCT OPacks and benefit from the increase in the number of EDCTs for their mass transit agencies, and the interview data of police chiefs supports this likelihood. This policy option is considered likely not politically acceptable to the TSA, since it is not now a policy. The policy option is judged to be politically acceptable to the Congress since it is not prohibited by the *9/11 Commission Act*.

Policy option three, which would modify the NEDCTP to authorize funding for Tier II mass transit agencies to procure canines and training to TSA standards, is considered to be the best and recommended policy option. Given the budget that was available to Tier II mass transit agencies in FY '10, this policy option would result in an increase of 27.3 EDCT positions for Tier II mass transit agencies, which is more than the number of EDCTs for policy option two. The average cost per EDCT would be $200,000, which is less than the average cost per EDCT under policy options numbers one and two. Like policy option two, policy option three would increase the administrative burden on Tier II mass transit agencies, since they would be required to procure canines, train the canines and handlers, and administer the grant. Like policy option two, policy option three would likely be politically acceptable to Tier II mass transit agencies since they would be the recipients of the EDCTs and benefit from the increase in the number of EDCTs for their mass transit agencies. Policy option three is also likely to be acceptable to the Congress, since it would not be prohibited by the *9/11 Commission Act*, but the recommendation to take this direction is contained in the language of the *9/11 Commission Act* (IRCA, 2007). However since it is not already part of their policy, then it is not likely to be politically acceptable to the TSA. The significant increase in the number of LEOs over the other policy options, and the significantly less cost per EDCT in comparison to policy option two make this option the best and recommended option.

D. CONCLUSION

1. Increasing LEOs for Tier II Mass Transit Agencies

To increase LEOs for Tier II mass transit agencies, policy option three, which would create a new program to fund LEOs modeled after the DOJ's COPS grant program (COPS, 2011), is clearly the best and recommended option. Policy option one, maintaining the status quo, is the least desirable option for Tier II mass transit agencies because of its lack of effectiveness. Policy option two, which would make OPacks that are presently available only Tier I mass transit agencies (DHS, 2009b) also available to Tier II mass transit agencies is an inefficient way provide LEOs. Fewer LEOs can be funded under this option because the cost per LEO is higher.

Under policy option three, if the $27.3 million that was allocated to Tier II mass transit agencies from the TSGP in FY 10 (DHS, 2009b) could be used to fund LEOs, at a 3 year cost of $214,697 per LEO, then 127 LEOs could be funded for Tier II mass transit agencies. If the grant is administered so that the distribution of the positions to mass transit agencies is in groups of four officers each, then 31.75 teams of four LEOs each could be funded for Tier II mass transit agencies. These teams could perform high visibility, unpredictable anti terrorism patrols.

2. Increasing EDCTs for Tier II Mass Transit Agencies

To increase EDCTs for Tier II mass transit agencies, policy option three, which would modify the NEDCTP to authorize funding for Tier II mass transit agencies to procure canines and training to TSA standards is considered to be the best and recommended policy option. Policy option one, maintaining the status quo, is the least desirable option for Tier II mass transit agencies because of its lack of effectiveness. After all, not one of the seven Tier II Chiefs of Police who were interviewed had any NEDCTP assets for his mass transit agency. Policy option two, which would authorize Tier II mass transit agencies to apply for EDCT OPacks that are available only to Tier I mass transit agencies is the second best option. However, policy option two is inefficient. Fewer EDCTs can be funded under this option because the cost per EDCT is higher.

Since the NEDCTP provided its first EDCT for mass transit in 2005 (HR, 2005, p. 1) the program has produced an estimated 100 to 120 EDCTs for mass transit. Using the recommended policy option of modifying the NEDCTP to authorize funding for Tier II mass transit agencies to procure their own canines, and training to TSA standards, the number of EDCT's for mass transit could be doubled to 240 EDCTs (using the high estimate of 120 developed to date), at a three year funded cost of $24 million (120 x $200,000 = $24 million). Moreover, 120 EDCTs could be developed and the top 51 Tier II mass transit agencies, on average could each be immediately allocated 2.3 EDCTs. As a point of reference, the $24 million spent would be less than the $27.3 million that was allocated to Tier II mass transit agencies under the FY 10 TSGP.

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VIII. DISCUSSION AND RECOMMENDATIONS

A. INTRODUCTION

Even though the TSA was formed in November 2001, the security of the nation's mass transit system did not become a national priority until December 5, 2006 with the issuance of Executive Order 13416 (Bush, 2006), despite extremists' attacks on mass transit systems worldwide. On August 3, 2007 with the passage of Public Law 110-53, also known as the *Implementing Recommendations of the 9/11 Commission Act of 2007*, the framework for protecting mass transit was established IRCA, 2007). The *9/11 Commission Act* and TSA's four major security programs for mass transit were influenced not only by the spectacular attacks of September 11, 2001, but also the attacks on large cities passenger train systems between 2004 and 2006 in Madrid, London, and Mumbai. Recognizing that the U.S. mass transit system is massive, the application of the finite resources of TSA's security programs is risk based (GAO, 2009a, p. 8). To prioritize the distribution of resources the DHS designates eight major urban areas with mass transit systems as Tier I and the rest of the country's urban areas as Tier II (OIG, 2008, p. 2). All transit agencies fall into Tiers I or II, based on their terrorism risk scores (OIG, 2008, p. 2). The *9/11 Commission Act* required that TSGP recipients be selected based on risk (IRCA, 2007). The risk model is calculated as a function of threat, vulnerability, and consequences, or expressed as a mathematical formula, R = f(T x V x C) (GAO, 2009a, p. 51).

Consequently, the resources of the TSGP, whose purpose is to provide funds to transit agencies to protect critical infrastructure and the riding public, are distributed on this basis. Between fiscal years 2006 and2009 inclusive, $1.156 billion of TSGP funds were allocated to transit agencies for security (GAO, 2009a, p. 7); 90 percent of this funding was awarded to transit agencies in eight Tier I urban areas (GAO, 2009a, pp. 17–18). The remaining 10 percent of the funds were allocated between 51 transit agencies in Tier II urban areas on a competitive basis (GAO, 2009a, pp. 17–18). In FY 2008, $13.7 million was transferred from Tier II back to Tier I transit agencies for various reasons

(GAO, 2009a, pp. 17–18). TSA's distribution of other major security program resources to Tier II mass transit agencies is similarly skewed. For example, in the case of the NEDCTP, only about 120 EDCTs have been developed for the entire nation's mass transit system with few for Tier II agencies. In the STSIP, Surface Transportation Security Inspector (TSI) positions are understaffed, and VIPR operations are conducted at Tier II mass transit agencies on a less frequent basis than desired.

After more than a billion dollars of expenditures in one TSA security program alone, the risk model used to allocate security program resources across Tier I and Tier II regions has been determined to be flawed (NRC, 2010). The GAO found that the DHS risk model does not measure variations in vulnerability across regions, or transit systems, due to a lack of consistent data, which limits the model's overall ability to assess risk (GAO, 2009a, pp. 16–17). Of even greater concern though, the National Research Council (NRC) of the National Academies concluded that the DHS risk analysis practices and risk methodology are flawed (NRC, 2010). The NRC found that concerning infrastructure risk analysis in relation to the risk from terrorism, defining the threat and estimating probabilities are inherently challenging because of the lack of experience with such events, the associated absence of data on which to base reliable estimates of probabilities, and the effect of an intelligent adversary that may seek to defeat preparedness and coping measures (NRC, 2010, p. 4). The NRC concluded that until deficiencies in the methodology are improved, only low confidence should be placed in most of the risk analyses conducted by DHS (NRC, 2010, p. 11).

While more than a billion dollars has been spent preparing for a spectacular terrorist attack on major U.S. regions' mass transit systems, the terrorism threat has been evolving. DHS Secretary Napolitano indicated that homegrown terrorists represent a new and changing facet of terrorist threat (DHS, 2010). She defined "homegrown" as terrorist operatives who are U.S. persons who were radicalized in the United States and who learned terrorist tactics either in the United States or in foreign training camps (DHS, 2010). Secretary Napolitano observed that now, virtually anything is a potential target (DHS, 2010). As if to support the DHS Secretary, the Mineta Transportation Institute reported that between September 12, 2001 and the end of 2009, 44 cases of domestic

radicalization and recruitment to jihadist terrorism were reported in the United States (Mineta, 2010, p. 15). Thirty two cases were reported between 2002 and 2008, an average of four a year (Mineta, 2010, p. 15). By contrast, in 2009 there were 12 cases, a considerable increase (Mineta, 2010, p. 15). A review of the specific cases reveals extensive terrorist activity in Tier II regions.

The authors of the Mineta report considered whether the nation should be concerned about the possibility of Tier II type public bus transportation becoming a potential target for terrorist attacks (Mineta, 2010, p. 16). The report concluded that a public bus, bus station, or bus stop in the United States provides an adequate body count for terrorists, and they have been attacked repeatedly elsewhere outside the U.S .with success (Mineta, 2010, p. 16). These targets might reasonably appear on the radar screens of radical jihadist groups seeking an operational success, particularly if heavy rail mass transit targets become hardened in anticipation of attacks or in response to them (Mineta, 2010, p. 15).

As the thesis title suggests, this research focused on TSA's four major security programs for mass transit, and how they can be improved to better serve the terrorism security needs of mass transit agencies classified as Tier II. The research revealed that TSA's four major security programs had already been reviewed by both the DHS OIG and the GAO. Recommendations for improving TSA's security programs were made by both of these government agencies. Rather than repeat their work, this thesis set out to address a more strategic need, increasing LEOs and increasing EDCTs, which if accomplished, may result in a significant leap toward improving the security of Tier II mass transit agencies. While these two strategic goals were researched, at a more tactical level several other possible improvements of TSA's four major security programs for mass transit were revealed. These strategic goals and tactical considerations will be discussed in Section B.

B. DISCUSSION OF STRATEGIC GOALS

1. Goal One, Increasing LEOs for Tier II Mass Transit Agencies

Goal one was to increase LEOs for Tier II mass transit agencies. The best and recommended policy option was found to be for the TSA to create a new program administered by the TSA, within the TSGP, to fund LEOs for Tier II mass transit agencies. This new program would be modeled after the DOJ's Office of Community Oriented Policing Services (COPS) grant program (COPS, 2011). This proposed new grant program will fund 100 percent of the salary, benefits, and training for entry level LEO positions with a performance period of 36 months. Under the DOJ's COPS program in FY 10, 1,388 LEOs were funded nation wide at a cost of $298 million (DOJ, 2010), an amount that was close to the $288 million allocated for the FY '10 TSGP, that included the Tier I, Tier II, Amtrak, and freight rail allocations (DHS, 2009).

This recommended policy option would focus grant funds on operational costs rather than infrastructure security improvements, which are priorities of the TSGP; however, by statute, the TSGP places limits on the amount of funding that can be applied to operational costs because the grant program is intended first and foremost to fund infrastructure security improvements (IRCA, 2007). As Chiefs of Police noted though, more funding needs to be directed at the human elements of security, particularly high visibility patrols conducted on an unpredictable basis. While no one is recommending that the entire TSGP budget be shifted from infrastructure security improvements to human sources of security, perhaps it is time to re-examine the optimum balance between the two alternatives. This is a timely question since, pursuant to the *9/11 Commission Act*, the allocation of TSGP funding for operational costs versus infrastructure security is scheduled to be reduced from 20 percent to 10 percent in FY 11 (IRCA, 2007). If we are to increase the number of LEOs for mass transit, then the TSGP allocation of funding between infrastructure security improvements and operational costs must be changed. For this to occur, legislative change will have to be sought after and approved.

While the allocation of TSGP funding between infrastructure security improvements and operational costs is set by statute, the allocation of funding between

Tier I and Tier II mass transit agencies is risk based (GAO, 2009a). Perhaps it is also time to re-examine how that distribution is calculated. First, consider that the DHS risk model and methodology has been called into question by both the GAO (GAO, 2009a) and the NAC (NRC, 2010). The GAO discovered that the DHS risk model has not been comparing differences in vulnerabilities across regions and mass transit agencies (GAO, 2009a, p. 16). The NAC has characterized the DHS risk analysis as unreliable (NRC, 2010, p. 11), particularly due to its inability to accurately assess the threat component of the risk model (NRC, 2010, p. 4). The second factor to consider is the changing threat environment. In the aftermath of September 11, 2001 and the attacks on mass transit in Madrid, London, and Mumbai, no one would reasonably question the need to prioritize security resources for major city mass transit systems that carry high volumes of passengers through underground tunnels. The need to continue to focus resources on these potential targets is clear; however, with the development of the "homegrown threat" and the increased level of terrorist activity that has recently been identified in Tier II regions, we should re-examine if Tier II regions are receiving an appropriate allocation of resources, and whether our limited security resources are being used as effectively as possible.

2. Goal Two, Increasing EDCTs for Tier II Mass Transit Agencies

Goal two was to increase EDCTs for Tier II mass transit agencies. The best and recommended policy option was found to be for the TSA to authorize mass transit agencies to procure canines on their own and to provide for their own training of the explosives detection canine teams. The proposed policy option would be administered within the NEDCTP. Under this option, the TSA will reimburse mass transit agencies for all start up costs, including canine, training, and equipment. The TSA will reserve the right to insure that the canine teams perform to a specified standard and meet all TSA certification requirements.

Procurement and training would be required to meet certification standards of qualified organizations such as the National Police Canine Association (NPCA), the United States Police Canine Association (USPCA), or the International Explosive

Detection Dog Association (IEDDA), and be endorsed by the TSA under the standards of the TSA's NEDCTP. Additionally, mass transit agencies would be required to maintain certification, utilization, and training data to show compliance with guidelines set by the Scientific Working Group on Dog and Orthogonal Detection Guidelines (SWGDOG). Other requirements may be imposed such as guaranteeing a response capability by the mass transit agency on a 24 hours a day, seven days a week basis.

TSA would pay the upfront cost of the dog, training of the dog and handler, explosives training aids and technical assistance, which we can reasonably estimate at a one time cost of $100,000 plus an annual payment of $50,000 (GAO, 2008) in the following years. The TSA would have the option to adopt the trained EDCTs into the NEDCTP, if all of the above requirements were met and if funding permits.

EDCTs are recognized as the best tool for the detection of IEDs (Pearce, pp. 1, 9), and the NEDCTP is probably the best program in the nation for the development of EDCTs outside of the Department of Defense. The shortcoming of the program is that the NEDCTP does not produce EDCTs at a rate sufficient to meet the security needs of mass transit, apparently due to competing demands from other transportation sectors. Since 2005, only about 120 EDCTs have been produced for mass transit with inadequate numbers of EDCTs for Tier II mass transit agencies. This is in light of the fact that none of the seven Chiefs of Police who were interviewed from Tier II mass transit agencies had received any EDCTs through the program.

There is no reason to doubt the potential for success of this recommended policy option since mass transit agencies have already displayed a limited capability of procuring and training EDCTs to national standards without assistance from the NEDCTP. However, due to limited resources and harsh economic conditions, mass transit agencies cannot be expected to produce these EDCTs without financial assistance from the TSA. If the recommended policy option is adopted, the number of EDCTs could be doubled from the estimated 120 that are now assigned to mass transit, to 240 at a three year cost of $24 million. As a point of reference, the $24 million spent would be less than the $27.3 million that was allocated to Tier II mass transit agencies under the FY 10 TSGP (DHS, 2009b).

It is not known what role DHS's flawed risk analysis model (NRC, 2010) has played in the allocation of NEDCTP resources to Tier II mass transit agencies, if any. As in the first goal, with the development of the "homegrown threat" and the increased level of terrorist activity that has recently been identified in Tier II regions, perhaps it is time to re-examine how the resources of the NEDCTP are allocated, and if the NEDCTP can be modified to enable Tier II regions to acquire EDCTs under this policy option.

C. TACTICAL CONSIDERATIONS

While the two strategic goals were researched, other tactical level issues were revealed that bear consideration regarding their potential for improving other of TSA's major security programs for mass transit.

1. Improving the STSIP

There is general agreement that TSIs perform a valuable mission in regard to BASE reviews within this program (OIG, 2008), but TSIs' role in VIPR operations is controversial and deserving of attention. Although TSA management seems to support the use of TSIs in VIPR operations, other involved parties have raised concerns, including the TSIs themselves (OIG, 2008).

TSIs have described themselves as underutilized in VIPR operations and do not consider the activity to be an effective use of their time (OIG, 2008, p. 29). Tier I mass transit agencies do not uniformly use TSIs, and Tier II mass transit agencies are generally concerned over TSIs' lack of training and law enforcement background. Important to note is that the DHS IG voiced concerns for the safety of an unarmed TSI if the TSI were mistaken as a federal agent during a VIPR operation (OIG, 2008, p. 28).

Given that using TSIs to perform VIPR operations is of questionable merit, the question arises as to how TSIs can be best utilized. Considering the fact that the risk methodology used by the TSA has been characterized by the NAC as flawed and unreliable NRC, 2010), perhaps the TSI positions could assist in addressing the DHS risk model's weaknesses. Since the DHS risk model does not compare and contrast vulnerabilities in mass transit systems across regions due to a lack of data, and consistent

methodologies of gathering that data are not being used (GAO, 2009a, pp. 16–17), perhaps TSIs could be trained to work with mass transit agencies to address this weakness. Perhaps TSI's could also be trained and used to address current weaknesses in developing terrorism threat data for the risk analysis model. If TSIs were trained and used to assist in addressing the weaknesses found in the DHS risk model, they could have a profound impact on improving other major security programs where decisions have to be made on the appropriate allocation of program resources.

2. Improving the VIPR

There is general agreement among chiefs of police of mass transit agencies that VIPR operations perform a valuable mission with their high visibility patrols performed on an unpredictable basis. These operations have resulted in notable accomplishments for Tier II mass transit agencies. There are, however, some continued operational problems that contribute toward diminished effectiveness of the program. For example, there are still a handful of locations where coordination between the TSA and the mass transit agency remains an issue. There is also a continued need to address communications problems between mass transit agencies and the TSA. From an administrative perspective, VIPR operations add expenses to Tier II mass transit agencies that cannot be recovered. This is due to the fact that transit agencies must assign personnel to VIPR operations and TSA generally does not reimburse these costs.

On a broader note though, the level of participation by Tier I mass transit agencies in VIPR operations, as reflected in interviews of Tier I chiefs, raises the question of how effective the VIPR program really is for those agencies. Regarding Tier II mass transit agencies, from the perspective of the Tier II chiefs who were interviewed, the limited range of frequency of VIPR operations from one operation a week to four or five a year, raises the question of how effective the program is for those agencies as well. Tier II chiefs consistently comment that they would prefer more VIPR operations, and the frequency of the operations is spread too thin. VIPR operations' timing is often focused on special events and holidays.

If the VIPR program is not as effective for mass transit agencies as it could or should be, should consideration be given to directing that funding to another security program? Can the resources be better utilized by funding LEO positions for mass transit agencies similar to the DOJ's COPS grant program? Can the resources be better directed by funding LEO positions for mass transit agencies that do not have the resources to perform high visibility patrols on an unpredictable basis for their own mass transit agencies? If VIPR program funding was re-directed to fund the hiring of LEOs by mass transit agencies, could the frequency of these high visibility patrols be increased, and could the administrative and operational concerns be eliminated?

D. TRANSIT POLICING AND SECURITY PEER ADVISORY GROUP

John M. Bryson, a professor of planning and public affairs and author of *Strategic Planning for Public and Nonprofit Organizations* says that public organizations operate in environments that have become increasingly uncertain and more tightly connected (Bryson, 2004). This statement certainly applies to the uncertain world of mass transit security and the interconnected mass transit systems used to transport millions of passengers in this nation each day. To address this challenge, Bryson says that organizations need to adopt a fourfold response. They must think, act, and learn strategically (Bryson, 2004). Their response must also translate insights into effective strategies to cope with changed circumstances (Bryson, 2004). They must develop rationales that lay the groundwork for the adoption and implementation of their strategies (Bryson, 2004). Lastly, they must build coalitions, large and strong enough to adopt and implement their strategies (Bryson,, 2004, pp.1–61).

In order to address these security challenges, Bryson suggests that we must build coalitions, large and strong enough to adopt and implement our strategies (Bryson, 2004). The Transit Policing and Security Peer Advisory Group (PAG) is this sort of coalition. The PAG was formed to bring together Transit Police Chiefs and Security Directors from mass transit systems across the nation to serve as a means of communication and liaison between transit security professionals, the TSA, and other government agencies. Its mission includes reducing the risk of terrorism through the exchange of effective

practices, and advancing effective transit specific security initiatives to include the six transit security fundamentals as outlined in the Transportation Sector-Specific Plan.

This thesis will be shared with the PAG, based on its mission to reduce the risk of terrorism by advancing effective transit specific security initiatives. The PAG is well suited to review the strategic policy recommendations for increasing LEOs and EDCTs. If the PAG considers the recommendations to have merit, they may choose to adopt them as their own, or modify them and then develop an effective implementation strategy with the TSA. The PAG is also well suited to review the tactical considerations for improving the STSIP and VIPR program. As with the strategic goals, if the PAG considers the tactical considerations to have merit, they may likewise develop an implementation strategy with the TSA. The anticipated outcome is to improve TSA's four major security programs for Tier II mass transit agencies.

APPENDIX. TERRORISM CASES WITH TIES TO TIER II REGIONS

On June 03, 2008 Christopher Paul, also known as Abdul Malek, a native of Columbus, Ohio, pleaded guilty in U.S. District Court in the Southern District of Ohio, Columbus, Ohio, to count two of a three count indictment charging him with conspiracy to provide material support and resources to terrorists; conspiracy to use a weapon of mass destruction (explosives); and providing material support and resources to terrorists (DOJ, 2009f). Paul had joined Al Qaeda in the early 1990s, fought in Bosnia, and conspired with others to target Americans both at home and abroad (DOJ, 2009f).

On June 18, 2008, Ahmed Abdellatif Sherif Mohamed, a resident of Tampa, entered a guilty plea in U.S District Court, Middle District of Florida on a charge of providing material support to terrorists (DOJ, 2008). Mohamed's vehicle had been stopped by sheriff's deputies in Berkeley County, South Carolina and a search of the car located explosives materials that had been transported from Florida (DOJ, 2008).

On June 13, 2008 Mohammad Zaki Amawi and Marwan Othman El-Hindi were found guilty in U.S. District Court in the Northern District of Ohio of conspiring to kill or maim persons outside the United States, conspiracy to provide material support to terrorists, and distributing information on improvised explosive devices and suicide bomb vests (DOJ, 2009i) Amawi is a citizen of Jordan and El-Hindi is a naturalized U.S. citizen born in Jordan (DOJ, 2009i).

On April 30, 2009 Ali Saleh Kahlah Al-Marri, a dual national of Saudi Arabia and Qatar (DOJ, 2009a), pleaded guilty in U.S. District Court, Central District of Illinois to conspiracy to provide material support to the al-Qaeda terrorist network. (DOJ, 2009g). Al-Marri was described by the Attorney General as "an al-Qaeda sleeper agent captured in the United States" (DOJ, 2009g). Al-Marri entered the United States on September 10, 2001, purportedly to pursue a bachelor's degree at Bradley University in Peoria, Illinois (DOJ, 2009a).

On May 20, 2009 Mohammed Abdullah Warsame, a resident of Minneapolis Minnesota pleaded guilty in U.S. District Court in the District of Minnesota to conspiring to provide material support and resources to al-Qaeda (DOJ, 2009e). Warsame, a naturalized Canadian citizen of Somali descent, traveled to Afghanistan in March 2000 where he attended an al-Qaeda training camp and later to the al Al Faruq training camp where he met Osama Bin Laden (DOJ, 2009e). Upon returning to Minneapolis, Warsame maintained his relationship with al-Qaeda associates and provided information to them (DOJ, 2009e).

On June 10, 2009 Syed Haris Ahmed, was found guilty in U. S. District Court in the Northern District of Georgia of conspiracy to provide material support to terrorists (DOJ, 2009c). Ahmed is a naturalized U.S. citizen, was born in Pakistan and raised in Marietta and Dawsonville GA (DOJ, 2009c). Ahmed provided videos of potential U.S. targets of terrorism to members of the terrorist organizations al-Qaeda in Iraq, and Pakistan-based terrorist organizations Lashkar-e-Tayyiba, and Jaish-e-Mohammed (DOJ, 2009c).

On August 12, 2009 Ehsanul Islam Sadequee, was found guilty in U. S. District Court in the Northern District of Georgia of conspiracy to provide material support to terrorists (DOJ, 2009b). Sadequee was born in Fairfax Virginia and attended schools in the United States, Canada, and Bangladesh (DOJ, 2009b). Sadequee was a co-conspirator of Syed Haris Ahmed, who provided videos of potential U.S. targets of terrorism to members of the terrorist organizations al-Qaeda in Iraq, and Pakistan-based terrorist organizations Lashkar-e-Tayyiba and Jaish-e-Mohammed (DOJ, 2009b).

On May 26, 2010 Hosam Maher Husein Smadi pleaded guilty in U.S. District Court in the Northern District of Texas to a felony offense of attempted use of a weapon of mass destruction for the attempted bombing of a downtown Dallas, Texas skyscraper in September 2009 (DOJ, 2010b). Smadi is a Jordanian citizen who worked in Italy, Texas (DOJ, 2009d). Smadi had repeatedly espoused his desire to conduct terror attacks in the United States and serve as a soldier for Usama Bin Laden and al-Qaeda (DOJ, 2010d).

On August 5, 2010, the U.S. Attorney General announced the indictments of 14 individuals on terrorism violations for providing money, personnel, and services to al-Shabaab, a terrorist group operating in Somalia with ties to al-Qaeda (DOJ, 2010a). The indictments were returned in Minnesota, Alabama, and southern California (DOJ, 2010a). The charges relate to what was described as a "deadly pipeline" that has routed funding and fighters to al-Shabaab from cities across the U.S (DOJ, 2010a). In the District of Minnesota alone, a total of 19 defendants have been charged in connection with the investigation (DOJ, 2010a). The Attorney General described the situation as a disturbing trend of radicalization with increasing numbers of individuals including U.S. citizens who have become captivated by extremist ideology and who have taken measures to carry out terrorist objectives, either at home or abroad (DOJ, 2010a).

On November 27, 2010 Mohamed Osman Mohamud was arrested on charges of attempting to use a weapon of mass destruction (explosives) at an annual Christmas tree lighting ceremony in Portland, Oregon (DOJ, 2010c). The charges were based upon a criminal complaint filed in the District of Oregon. Mohamud is a naturalized U.S. citizen from Somalia and a resident of Corvallis, Oregon (DOJ, 2010c). While Mohamud was plotting his planned attack with an undercover FBI operative he said, "***It's in Oregon; and Oregon like you know, nobody ever thinks of it*** [emphasis added]" (DOJ, 2010c).

On February 23, 2011, Khalid Ali-M Aldawsari, a citizen of Saudi Arabia and resident of Lubbock, Texas, was arrested by special agents of the FBI in Texas (DOJ, 2011). He was charged with the attempted use of a weapon of mass destruction in connection with his purchase of chemicals and equipment necessary to make an improvised explosives device (DOJ, 2011). Aldawasari was lawfully admitted into the United States in 2008 on a student visa and is enrolled at South Plains College near Lubbock (DOJ, 2011). Evidence recovered from Aldawasari's personal computer revealed that he had researched possible targets in Tier II regions (DOJ, 2011).

On September 22, 2010, Robert S. Mueller, III, Director, Federal Bureau of Investigation, appeared before the Senate Committee on Homeland Security and Governmental Affairs (Mueller, 2010). Director Mueller indicated that domestic radicalization and homegrown extremism is becoming more pronounced (Mueller, 2010).

Director Mueller characterized the primary sources of terrorist plots against the United States as emanating from al Qaeda, al Qaeda's associates, and homegrown extremists (Mueller, 2010).

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